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APPENDIX TO THE JOURNALS

OF THE

SENATE AND ASSEMBLY

OF THE

FORTY-SECOND SESSION

OF THE

LEGISLATURE OF THE STATE OF CALIFORNIA

VOLUME IV

CALIFORNIA STATE PRINTING OFFICE
SACRAMENTO
1917

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VOLUME IV.

1—Report of State Board of Education, 1914–1916.
2—Report of State Board of Viticultural Commissioners, 1913–1916.
3—Report of State Dairy Bureau, 1915–1916.
4—Report of Joint Legislative Committee.
5—Report of Superintendent of State Printing, 1914–1916.
6—Report of State Veterinarian, 1915–1916.
7—Report of Department of Weights and Measures, 1915–1916.
8—Report of Industrial Welfare Commission, 1915–1916.
9—Report of State Water Commission.
10—Report of Commission of Immigration and Housing, 1916.
11—Report of Board of Dental Examiners, 1914–1915.
12—Report of Reclamation Board, 1914–1916.

Second Biennial Report

OF THE

State Board of Education

State of California

1914-1916

CALIFORNIA STATE PRINTING OFFICE
SACRAMENTO
1916

PART I.

LETTER OF TRANSMITTAL AND REPORT OF THE PRESIDENT.

LETTER OF TRANSMITTAL.

SACRAMENTO, October 18, 1916.

The State Board of Education has the honor to submit to His Excellency, Hiram W. Johnson, Governor of California, in accordance with section 1519 of the Political Code, its second biennial report.

The report contains, in addition to a résumé of the activities of the board, the reports of the various committees of the board, the reports of the commissioners and the Superintendent of Public Instruction, and the report of the Public School Teachers' Retirement Salary Fund Board.

Respectfully submitted.

STATE BOARD OF EDUCATION,
By EDWARD HYATT, Secretary.

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REPORT OF THE PRESIDENT.

To His Excellency, Governor Hiram W. Johnson.

We transmit herewith the biennial reports of the three Commissioners of Education to this board, the biennial report of the State Superintendent of Public Instruction, and the biennial reports of the various standing committees of the board. These will give a comprehensive and interesting review of the work of the state department of education for the past two years; and in this introductory statement it seems necessary, therefore, only to call attention to a few of the more important matters that have engaged our attention and to emphasize briefly some changes in the laws relating to educational matters which seem to us important for the most effective development of the schools of the state and the permanency of the retirement salary system.

TEXTBOOK ADOPTIONS.

One of the most important phases of the work of the State Board of Education for the biennial period now drawing to a close has been the adoption of new texts in reading, history and writing. In every instance, the adoptions were made only after a very careful and thorough examination by educational experts of the various books or manuscripts submitted; their work was reviewed by the commissioners of education and the state superintendent; and then after listening to all these reports and to the arguments of the representatives of the book companies, the board sat as a sort of court of last resort and made its decision. The new texts are having their first use in the schools for the present school year, and we are led to believe they are meeting with favor from the teachers generally as an improvement over anything the state has yet provided in these branches.

We are disposed in all modesty to point with some degree of pride to the fact that at the request of this board the Mace history which was adopted was revised in many important particulars; greater prominence was given to some of the more recent developments in the country's history; and the development of the west, the achievements of peace, and the work of some of the famous women in our history were given recognition. These changes have made the book a much more valuable one, not only for use in California but in the country at large.

A brief but graphic and valuable history of California is added as a supplement to this text. This was prepared by Professor Valentine of the San Francisco State Normal School and, in our judgment, is a most important contribution to the historical literature of the state; it should be a great aid in making the children of our schools familiar with the fascinating and inspiring story of the development of the Golden State.

The fourth and fifth readers were revised so as to provide more western material and to supply considerable material relating to rural life. The readers for the sixth, seventh and eighth grades were prepared by Leroy E. Armstrong, a California educator, and they give a much fuller recognition of the work of California authors than it would have been possible to secure in any standard series of readers published by an eastern house.

In all textbook adoptions the test of educational merit as determined by expert investigation has been the first one applied, but due consideration has also been given to the business side of the question; and, as a result of this, some of the contracts have been closed at figures which mean a great saving to the state throughout the life of the contract.

We desire, in this connection, to express our appreciation and pride in the promptness and efficiency with which the various texts adopted have been turned out by the state printing office and in the splendid typographical appearance which they present. These various books are a powerful argument in favor of state publication of the books for the elementary schools.

The contracts on other textbooks in the state series have expired or will expire in the near future, and we have taken steps to give to the problem of adoption in these texts the same exhaustive study that has characterized the adoptions made in the last year. Whether changes are made or the present texts continued under new contracts will depend on the best expert advice we can secure and on the question of cost as determined by the royalties and expense of printing.

HIGH SCHOOL TEXTBOOKS.

In response to quite a general demand for the publication and free distribution of high school textbooks by the state, a holdover legislative committee has been making an investigation of this important subject. This matter is reviewed in the report of Commissioner Wood. and we coincide in the views which he expresses. The matter of the purchase and distribution of the high school texts by the state or the various districts is a proposition worthy of careful consideration, but that is a problem apart from the one of state publication. Applying the tests of educational efficiency, of local opportunity for differentiation and of economy, it does not seem to us wise to recommend that the state launch the experiment of statewide uniformity and state publication of high school texts. The high school teachers of the state are practically a unit in their opposition to state uniformity, on the ground that it would stifle initiative, prevent adaptation to local conditions and narrow the scope of high school work. The problem of state uniformity and state publication of high school texts is quite a different one from that of free textbooks for the elementary schools. Including the adoptions made during the past year, the number of separate textbooks furnished by the state for the elementary schools is only 22. Even if there were a uniform series of high school texts, it would require over 100 different textbooks, as 106 subjects are now taught in the high schools of the state. Even if a latitude of only two or three standard texts were allowed in high school subjects, it would involve the publication by the state of two or three hundred different books, many of them in small editions. It has not seemed to us that many of those who have been urging uniform and state published high school texts have realized this phase of the question.

We have, however, met the objections of those who have argued against the present multiplicity of texts for high school use by revising the list of approved textbooks and eliminating all texts not in use in at least five high schools of the state. We are making a study of the whole problem and may find that still further restriction of the list is possible without any sacrifice to educational standards or the opportunity for community specialization.

HIGH SCHOOL AND SPECIAL CREDENTIALS.

During the past two years, the state board has considered 564 applications for the State Board High School Credential and 349 have been issued. In view of the large number of high school teachers who are being annually graduated from the five-year course in the State university, Stanford and the University of Southern California and given credentials that authorize them to teach in any high school in the state, we feel that the high standards for the State Board High School Credential which have been maintained in this state for many years should be rigidly adhered to. It is true, however, that some of our best equipped and most valuable teachers enter high school work in the state through the door of the State Board Credential; and it is not sound educational policy to place such restrictions and limitations on this credential as would practically debar from engagement in the state some very highly qualified and eminently desirable teachers, both from California and the East. The development of the junior college is attracting to that department of public school work some of the most successful faculty members of the smaller colleges of the state and even of the universities, and no unreasonable standards of certification should be set up to keep these men and women from entering public school work, for they are often the finest teachers procurable for the advanced work of the junior college.

It seems likely that within a few years it will be desirable to provide for a junior college credential which would be granted only to those having a master's degree or its equivalent, and which would enforce a higher standard of teaching experience than is now required for the high school credential.

The last session of the legislature placed upon the state board the responsibility of prescribing the regulations under which county boards of education shall issue certificates for the teaching of special subjects. This change was made at the earnest request of the educational leaders of the state, with a view of raising the standard for this class of credentials and providing for a uniform system of certification throughout the state.

The problem of rules and regulations for these credentials was studied with great thoroughness by the commissioners of education, and the plan was reviewed with careful deliberation by the members of the board. We were confident that we had established standards in general higher than had been in force in the various counties of the state under the old plan, and we hoped that one effect of state uniformity and strict requirements would be to restrict somewhat the number of credentials in special subjects.

We have, however, received a regular deluge of applications. During the year that the new law has been in effect, there have been filed with the commissioner of vocational schools practically 2,000 applications for credentials in special subjects, which include such a wide range of activities as boat making, flute playing, folk dancing, the making of hoop skirts, and the repair of automobiles. On advice of Commissioner Snyder, or members of the board, many of these applications have been withdrawn because the applicants were seeking certification in subjects not authorized to be taught in the schools of the state or because they were clearly not eligible to receive the credentials which they sought. Even then, after this sifting and the rejection of many of the cases considered, there were 851 special credentials granted during the year.

This does not mean that number of new teachers turned loose to compete for positions, for many of the applications granted have been to teachers already in service but whose special credentials were limited to some one county. If they had any assurance or even possibility of changing to some other county, they have taken the precaution to secure the state credential, which is good throughout the state.

Making all due allowance for this fact, and recognizing moreover that it is desirable that the schools have at all times the opportunity to choose from a number of well qualified teachers, we are convinced that it will be wise to raise still higher the standards for special credentials. The commissioners of education are now at work on a revision of the rules and regulations, with a view of stiffening the requirements; and it will certainly be the policy of the board for the coming year to adhere very rigidly to the standards which these new rules will impose.

During the past year, we have been granting credentials for the instruction of deaf children under a decidedly arbitrary interpretation of the law governing special certification. It seems desirable that the scope of the law be broadened so that the state board will clearly have authority to issue credentials to special teachers for defective or atypical children.

NORMAL SCHOOL REGULATIONS.

The last session of the state legislature imposed on the State Board of Education important responsibilities in the matter of standardizing the courses of study of the normal schools of the state and prescribing other regulations regarding their work. We did not seek this task, and have assumed it reluctantly. We are, however, seeking to meet the responsibilities with an earnest purpose both to promote the interests of the normal schools and also to encourage the general educational development of the state.

Through the commissioners of education, the state superintendent and the members of the normal school committee of this board, a careful preliminary study was made of the problem of standardization. The normal schools were visited and their methods studied; their courses of study were compared; and such information as was available was secured from other states.

The annual joint meeting of the state board and the normal school presidents, provided for by law, was held in Los Angeles last April, and the situation was thoroughly discussed in conference with Superintendent Hyatt and the three commissioners. The rules and regulations then agreed upon were carefully reviewed at the regular June meeting of the board and the final result will now be given the test of actual application to the organization and work of the schools. Some of the normal school presidents and other educational authorities in the state have said that the new plan is a great piece of constructive work. We sincerely trust the estimate is correct; we recognize, however, that the plan is in some degree an experiment and we shall watch its development with an open mind and a willingness to make adjustments in the future as conditions may demonstrate their necessity.

Heretofore the normal schools have been a law unto themselves; the old joint normal board never exercised any effective authority, and that was why it was discarded as a useless piece of educational machinery.

It was expected that the change to a system of uniform regulations prescribed by a body entirely outside the normal school organizations might be attended with some friction; but, while differences did arise between the members of the board and the normal school authorities, they were less marked than those which developed among the normal school people themselves, and, in general, the best of feeling prevailed. On both sides there was certainly an earnest desire to improve the efficiency of the normal schools and make them a still greater power for usefulness in the state.

We feel hopeful that the new regulations will in general raise the standards of the normal schools and more effectively co-ordinate them with the public schools of the state. One effect will undoubtedly be to limit somewhat the output of the normals and compel some students who had hoped to graduate in two years to remain for three years. This result, however, we do not consider an objection. The normal schools now are graduating some 2,000 students every year, and that is several hundred more than can find positions. It therefore seems sound educational policy to require better preparation for entrance to the normals, high standards of training there, and strict requirements for graduation.

A copy of the normal school regulations is included in the report of the normal school committee, and any more detailed discussion of their character, therefore, seems unnecessary.

As a result of our study of the normal schools and our conference with the presidents and other representatives of these institutions, we desire to bear our testimony to the high educational ideals of their presidents and faculties and to the splendid service which the schools have rendered to the state. A larger percentage of the teachers of California than of any other state have had the advantage of normal training, and this fact is without doubt largely due to the efficiency of our normal schools and the superior advantages they offer. We most cordially commend the California normal schools to the confidence of the people of the state and to the favorable consideration of all who intend to enter upon the profession of teaching in the elementary schools.

BULLETINS ISSUED.

During the past two years the following bulletins have been issued by the commissioners of education, and their value as a means of disseminating educational information has been recognized and appreciated by the teachers and school people generally of the state:

High School Textbooks in California.
High School Athletics.
Official List of High School Textbooks.
Revised Rules governing High School Certification.

Descriptive List of Text and Reference Books in Physics and Chemistry. (Now out of print.)
Cooperation in the Teaching of English.
Oral English in the High School.
New Laws relating to High and Intermediate Schools. (1915)
Regulations governing Educational Institutions Accredited to Recommend Individuals for Special Certificates.
Regulations governing Certification of Teachers of Special Subjects.
A Vocational Guidance Bibliography.
Union of School Districts.
Rules and Regulations for the Government of California State Normal Schools, etc.
Teaching of Music.
Permits to Teach in Intermediate Schools.
Disposal of Sewage in Rural School Districts.

The "Blue Bulletin," which is issued quarterly and edited in turn by the state superintendent and the three commissioners, has filled a unique place in supplying information regarding the activities of the department of education and giving publicity to helpful and timely suggestions. The "bulletin" was started as an experiment, but its value seems so well demonstrated that we shall certainly favor its continuance.

COOPERATION WITH OTHER BOARDS.

During the past biennial period the State Board of Education has cooperated with the Immigration and Housing Commission in the study of the problem of illiteracy, and with the State Board of Health in the preparation of a bulletin on school sanitation. There is now under consideration by a joint committee representing this board, the State Board of Health and the State Board of Charities and Corrections, the matter of legislation for the better care and instruction of defective children. Other instances of cooperation are discussed in the report of the Commissioner of Elementary Schools.

Whenever it is possible, it seems to us eminently desirable that there be consultation and cooperation among the various departments of the state government when their work touches on common problems.

LOS ANGELES OFFICE.

Within the past year, arrangements were made for the joint use of a room in the state headquarters in the Union League Building, Los Angeles, by the State Board of Education and the regents of the University of California. Mrs. Barnum has been spending certain hours on two days a week at these headquarters, and more recently a plan has been worked out whereby the commissioners of education, in turn, will spend a few days every month in the southern part of the state, making the board rooms headquarters. The president of the board has also arranged to spend one afternoon a month there in connection with the monthly visit of the commissioners.

It has been no uncommon thing for Mrs. Barnum to meet from 25 to 35 teachers or applicants for credentials in a single afternoon, and the new program is making possible group conferences on applications for credentials or retirement, or on other educational problems. The opportunity for consultation with the commissioners and members of the board, without the necessity of making a trip to Sacramento, is greatly appreciated by the people in the southern part of the state who are interested in educational matters.

It is quite possible that it may be found necessary to install a clerk in this office and keep it open every day. This step, however, will not be taken until the sufficiency of the present volunteer service, maintained practically without extra expense, has been fully tested.

LEGISLATION SUGGESTED.

Some important changes were made in the school laws at the last session of the legislature, and so far as the State Board of Education is concerned, the program of suggested legislation for the coming session will be a brief one.

The entire subject of legislation is discussed in detail in the report of the legislative committee, but some of the more important measures that we believe should receive the careful consideration of the legislature are the following:

Acting under the provisions of an act passed at the last session, the legislative reference bureau has prepared a codification of the school law. This work has been done with the advice and assistance of the legislative committee of this board and the commissioners of education. This codification will be submitted to the legislature for approval.

The Attorney General has recently ruled that under the provisions of section 1665 of the school law, the state board has no power to adopt any textbooks in elementary bookkeeping, humane education, elementary physiology and hygiene, music, drawing, and nature study, and that these subjects must be taught without textbooks. He has held, further, that while the textbook in physiology and hygiene now in use may be continued, no new text can be adopted. So far as that particular subject is concerned, the textbook has been in use for many years and it is logical to presume that sooner or later it will become out of date and it will be desirable to adopt a new text. There is no occasion at this time for entering upon a discussion of the question as to whether it is desirable, from the standpoint of educational efficiency, to provide textbooks in any other of the subjects mentioned. It had been generally understood, up to the time the Attorney General gave his opinion on the point, that the matter of providing textbooks in this entire list of subjects was optional with the state board; and it would seem desirable to amend the law so that this fact would be clearly stated. The absolute prohibition of textbooks in these subjects does not seem wise.

The last legislature took steps to restore about 80 per cent of the loss suffered by the elementary schools by the abolition of the poll tax. This still leaves a considerable deficit in school revenues, as compared with conditions existing before the tax was abolished. At present the high schools are more adequately financed by state aid than the elementary schools, and we earnestly trust that some means will be found at least to increase the state aid for the elementary schools to such a point as will fully offset the loss from the poll tax.

Under a ruling from the Attorney General, the junior colleges have been deprived of the per capita of state aid extended to the high schools. The junior college is one of the most significant and important of all the recent developments in the educational work of the state; and it certainly seems fitting that any city which will take upon itself this important work of higher education, which is approved and encouraged by the State university and Stanford, should receive some state aid. If the law were amended so as to allow the same credit for attendance in the junior colleges as in the high schools, the amount of state aid called for under the present enrollment would be only about $15,000.00 a year, and the future increase would be slow, as the development of the junior college will, of necessity, be limited to a few centers of population rather remote from the great universities. We shall, therefore, urge an amendment to the law giving, at least, this recognition to the junior college.

Dr. Snyder, Commissioner of Vocational Education, in his biennial report calls attention to certain needed changes in the state law relating to evening schools. We are in hearty sympathy with the view that changes in the law are needed in order to make possible greater elasticity in the establishment and maintenance of this type of school. The law should certainly permit the organization and operation of such schools for such periods of time during the school year and for such hours during the week as the needs of the local communities may require; and that is not possible under the law as it stands. It moreover seems only just that communities which undertake this important form of extension education should be given some state aid.

RETIREMENT SALARY.

Our administration of the retirement salary law for the past three years has convinced us that it will be wise, at the coming session of the legislature, to revise this act. We recently requested the State Board of Control to have an expert accountant investigate the teachers' histories that are on file in the office of the board and make an estimate, based on life insurance methods, of the probable status of the fund for the next ten years. This work was done and the report is startling. The estimate is that by the end of ten years the fund will be facing a deficit that will require direct appropriations by the legislature. This situation has developed at a time when teachers and school trustees were carried away with the idea that the contributions of the teachers alone are sufficient to maintain the fund in a condition of great prosperity. Some of them have, therefore, been preparing to urge that the retirement salaries be increased and that all teachers be compelled to retire on completion of the 30 years term of service.

The following figures will indicate how rapidly the demands on the fund are increasing:

Sixty-sixth fiscal year—		
July 1 to September 30, 1914	$17,854 62	
October 1 to December 31, 1914	21,084 32	
January 1 to March 31, 1915	22,849 30	
April 1 to June 30, 1915	24,238 81	
		$86,027 05
Sixty-seventh fiscal year—		
July 1 to September 30, 1915	$27,114 05	
October 1 to December 31, 1915	32,621 80	
January 1 to March 31, 1916	38,923 16	
April 1 to June 30, 1916	41,987 66	
		140,646 67
Total		$226,673 72

Number of applications for the retirement salary considered by the retirement board during sixty-sixth and sixty-seventh fiscal years	349
Number of applications granted during sixty-sixth and sixty-seventh fiscal years	280
Retirement salaries granted on thirty years of service during sixty-sixty and sixty-seventh fiscal years	186
Retirement salaries granted on disability during the sixty-sixth and sixty-seventh fiscal years	94
	280
Number of annuitants on roll at end of sixty-seventh fiscal year	458

We have estimated that the disbursements for the present fiscal year will be a little over $200,000.00, and this amount will increase from year to year.

It is also quite certain that the federal inheritance tax will tend to reduce the state revenues from inheritances, and that reduction may seriously affect the retirement salary fund, which now receives 5 per cent of the collateral inheritance tax.

In order to safeguard the retirement salary fund, it may seem desirable that for the last 10 or 15 years before retirement the payment by the teachers be increased. It may also seem desirable to consider an age limit for full retirement, in view of the fact that many annuitants are now being retired at the age of 50. In the natural order of things, many of these will continue on the salary roll for 20 or 25 years. It may furthermore be wise to require a longer period of teaching before the applicant can be eligible to retirement for disability; and it seems to us no more than just to reduce the credit now allowed for eastern teaching. In conjunction with the Board of Control, we are studying the entire problem with great care, and may suggest some amendments to the law.

We regard the law as a great piece of constructive legislation, and its benefits to veteran teachers has been so obvious as strongly to commend the system to public favor. We believe, moreover, that the good faith of the state is pledged to a continuation of the plan. All that we desire is to see the system placed on a sound and stable basis that will prevent such a deficit as might imperil the existence of the law.

SUPPORT OF TEACHING PROFESSION.

In all its work and in the activities of its commissioners, the State Board of Education has had the cordial support of the superintendents and the teachers of the state, of various educational organizations and of the faculties of the University of California, Stanford University and the University of Southern California. We desire to express our appreciation of the spirit of cooperation shown by these various educational interests of the state.

HARMONY OF DEPARTMENT.

In closing, we desire to express our sincere appreciation of the efficient services rendered the state by the three commissioners of education, and for the loyalty and faithfulness with which they have cooperated with the members of the board. We desire further to give recognition to the cordial manner in which State Superintendent Hyatt and the employees of his office have cooperated with the state board and its commissioners. The entire department of education has worked as a unit for the promotion of the interests of the schools of the state, and we trust the results have been in some degree commensurate with the sincerity of purpose with which the services have been rendered.

STATE BOARD OF EDUCATION,
By E. P. Clarke, President.

PART II.

REPORTS OF THE COMMITTEES.

REPORT OF TEXTBOOK COMMITTEE.

In the report of the Textbook Committee contained in the biennial report of the State Board of Education for the fiscal year 1913 and 1914, it was noted that the books then in use in the elementary schools of the state had all been selected and contracted for by the former State Board of Education. At the time of the above-referred to report, only three textbook contracts had expired; for the introductory history, for the spellers and for the writing books. The board was then engaged in an experiment in the preparation of a speller, and a Speller Bulletin for teachers' use was printed and has been in the hands of the teachers of the state long enough to give some very desirable data on the real speller needs of our schools. A new speller will doubtless be secured during the current school year.

The board deliberately delayed seeking new introductory history and writing books while plans for procedure in such matters were being formulated. One thought has been kept constantly in mind, namely, that this is a lay board and must depend for its technical decisions upon the judgment of experts. Such experts must be loyal to the schools of the state, and textbook experts must remain uncontaminated by any selfish interest while considering the merits of texts submitted to them for their review. To make its requirements distinctly known, a resolution was passed at the meeting of the board in September, 1914, which set forth the following rule as the principle upon which it proposed conducting all textbook submissions:

> It shall be inadmissible for any author, publisher, or representative of author or publisher to discuss the merits of any textbook with any member of the State Board of Education, or with any commissioner, textbook assistant, or other official of said State Board of Education, during such time as the textbook, series, or system is under consideration. No oral presentation shall ever be made except on request, and under rules prescribed by the State Board of Education; and any written presentation or communication relating to the textbook, series, or system in question, whether intended for members of the State Board of Education, or for commissioners, textbook assistants, or other officials of said board, must be addressed to the State Board of Education.

This statement forms a part of every advertisement for textbooks and is lived up to by the members of the board, the commissioners, critic readers, employees and textbook experts. Drastic as it seems at first glance, no author or publisher's representative has taken exception to it or tried to defeat the purpose therein manifested. The harmony that has characterized these contests has enabled the board to act in perfect fairness and has silenced the old time criticism on textbook contracting.

At various times during the last two years, the secretary of the board has been instructed to insert in certain advertising mediums advertisements calling for the tender of manuscripts or texts for writing books, primer and eight readers, introductory history and history of California, all of these to come under the rule as given in the above resolution. A special appeal has been made for a manuscript on citizenship for use in the elementary schools to take the place of the present Civics. The resolution calling for the new Civics expressed the wish of the board as follows:

> "We desire that this book shall be so written as to depict in a graphic manner and in simple language the individual's relation, from the time of childhood to the age of citizenship, to the community, the state and the nation, and conversely, the duty of the nation, state and community to the citizen and child. With equal care it should show the responsibility of employee to employer, and of employer to employee.
>
> "It should illustrate the application of these relationships particularly through their working in the laws and institutions of the state of California, as largely as possible, and should describe briefly the workings of the various commissions and departments of our state government. When methods or conditions in California contrast markedly with those prevailing elsewhere, particularly in such matters as the ballot, suffrage, etc., the comparison should be fairly made."

The contest for a textbook on citizenship has not yet been closed, and it is trusted that a book may be secured which will teach the children of California the glories of their state, the strength and virility of its government and the beneficence of its institutions, thus laying in them the foundation for a surer and more stable patriotism.

Texts or manuscripts for English have been called for, which will be considered during 1916–1917.

California schools share with the schools of the world in studying a geography at present shockingly behind a time that is changing its maps too fast for even the printing press. Last year a brief supplement was added to geographies in use to cover such changes as could be safely relied upon for the moment.

METHOD IN SELECTING TEXTBOOKS.

As has been noted before in this report, the present State Board of Education proceeded deliberately in formulating rules to govern its textbook submissions. The fundamental rule applying to all submitting texts has been given. Each book or manuscript submitted came immediately under the following rules for critical examination. Each subject was assigned to the special care of one of the commissioners of the board; then, each text and the publisher's brief of the same was submitted to expert readers, selected for acknowledged skill in the particular branch being studied; second, each text was considered by the board and commissioners, while the author or the representative of the publisher presented arguments, and finally the textbook readers' criticism and author's and publisher's arguments were reviewed by a committee composed of the Superintendent of Public Instruction and the three commissioners, whose unanimous report was given to the Textbook Committee, and by them presented to the board. At no stage of the consideration so far outlined was the price known to any of the critics. After the above expert study and report, which simply tabulated the critical standing of the books submitted, the board opened, in public meeting, all the bids. This presented a new viewpoint. The determination of this board has been to give to the children of California the best to be had, and, to this end, price has been kept in the background until quality was fully established. So far in every instance the adoption has been in accordance with our educational expert's recommendation. Fortunately, highest quality has come with fair prices, and it is gratifying to know that the best has been secured without any possible criticism of extravagance.

The results of the submissions already held are to be seen in the following adoptions, which are here tabulated with the royalty to be paid during the first four years, second four years and third four years, should the text continue in use. Or, as in the instance of the sixth, seventh and eighth grade readers and the History of California, the price paid outright for the manuscript.

Table of New Textbooks Selected by this Board.

Name of book	Publisher	Author	Royalty by 4-year periods 1	2	3	Publishers' retail price	Our cost price
Primer	Row, Peterson & Co.	Free & Treadwell	$.048	$.04	$.0352	$.32	$.15
First Reader	Row, Peterson & Co.	Free & Treadwell	.054	.045	.0396	.36	.16
Second Reader	Row, Peterson & Co.	Free & Treadwell	.06	.05	.044	.40	.18
*Third Reader	Rand, McNally & Co.	Holton Curry	.0575	.0525	.0475	.40	
*Fourth Reader	Silver, Burdette & Co.	Burchill, Ettinger & Shimer	.085	.08	.08	.50	
*Fifth Reader	Silver, Burdette & Co.	Burchill, Ettinger & Shimer	.095	.09	.09	.55	
Sixth Reader	State of California	L. E. Armstrong	1,000.00	333.33	333.33	†	.20
Seventh Reader	State of California	L. E. Armstrong	1,000.00	333.33	333.33	†	.20
Eighth Reader	State of California	L. E. Armstrong	1,000.00	333.33	333.33	†	
Mace's History	Rand, McNally & Co.	Wm. H. Mace	.08	.074	.071	.65	.30
With California sup.	State of California	Percy F. Valentine					
History of California	State of California	Percy F. Valentine	500.00			‡	‡
Writing Books—1 to 8	Zaner & Bloser Co.	Zaner	.01	.00875	.0075	.05	.03

*Not to be distributed till 1917.

†Owned by state of California. Not published elsewhere.

‡Not sold except as part of Introductory History.

The following is a list of the authorized textbooks in use in the elementary schools of the state during the school year of 1916–1917, grouped by publishers and showing date of the expiration of contracts. For details of the cost and distribution of textbooks please refer to the tables appended.

Present Contracts with Publishers.

	Royalty (per copy)	Date of expiration of contract
American Book Company—		
McMaster's Brief History of the United States	$.15	Jan. 1, 1918
McClymonds & Jones Essentials in Arithmetic	.09	July 1, 1918
McClymonds & Jones Elementary Arithmetic	.0525	July 1, 1918
D. C. Heath & Company—		
Dunn's Community and the Citizen (Civics)	.125	Jan. 1, 1918
The Macmillan Company—		
Chancellor's Speller (two books)	.025	July 1, 1911
Tarr & McMurry Introductory Geography	.09	July 1, 1916
Tarr & McMurry Advanced Geography	.15	July 1, 1916
Rand, McNally & Company—		
Holton Curry Third Reader	.0575	July 1, 1921
Mace's Beginners' History	.08	July 1, 1920
Row, Peterson & Company—		
Primer (Reading-Literature Series)	.048	July 1, 1920
First Reader (Reading-Literature Series)	.054	July 1, 1920
Second Reader (Reading-Literature Series)	.06	July 1, 1920
Silver, Burdette & Company—		
Fourth Reader (Progressive Series)	.085	*
Fifth Reader (Progressive Series)	.095	*
Guide Books to English (Book 1)	.0675	July 1, 1916
Guide Books to English (Book 2)	.09	July 1, 1916
State of California—		
Sixth Reader (Literature Readers)		†
Seventh Reader (Literature Readers)		†
Eighth Reader (Literature Readers)		†
World Book Company—		
Primer of Hygiene	.06	July 1, 1916
Zaner & Bloser Company—		
Zaner Method Writing (eight books)	.01	July 1, 1920

*Adoptions made; contract not drawn.

*Publishers' rights for California purchased outright.

CHARACTER OF NEW TEXTBOOKS.

Great strides in textbook making have been taken since the readers just discarded were adopted by the former board, and it has been found necessary to step well to the front in selecting new books that will stand in the lead for a period of years. In the Primer, first and second readers, this board has taken the pace of the most advanced and has offered our children for the first time, beginning with this school year, texts printed in two or three colors, with subject matter deemed by educational experts best adapted to hold the interest of the little child's mind. The Third Reader begins to take into consideration the growing mind and caters to an advance in learning, which it feeds on greater variety. Thus the whole system is built up through the fourth and fifth readers until we reach the sixth, seventh and eighth readers, for use in corresponding grades, which try to establish literary tastes in the child with prose and poetical masterpieces. The new sixth, seventh and eighth grade readers are the work of a former California teacher, Mr. Leroy E. Armstrong of Los Angeles, who worked out the plan and subject matter while teaching in our schools.

The old readers, which have been displaced, have not been wholly discarded, for instructions have gone out from the Superintendent of Public Instruction's office that those fit for use shall be placed in the school libraries for supplementary reading matter.

The new history known as Mace's Beginners' History of the United States takes the place of a book secured in 1904. For the old book a royalty of 15 cents was paid; for the new book only 8 cents is to be paid during the first four years. The new book is about 30 pages larger. After selecting the Mace text, which received the unanimous recommendation of the history experts, it was found necessary to have a part of the original text rewritten to bring the West and Western development, in which we and our children are vitally interested, up to their proper place in the history of our country. Occasion was also taken to shift the accent from war heroes to peace heroes and peace developments. Some matter was stricken out and whole chapters of new matter on The Beginning of Expansion Abroad, Westward Expansion and Development, Heroines of National Progress and Resources and Industries of our Country, were written by Dr. Mace at special request. It is interesting to learn that the publishers have substituted the text as revised for the schools of California for their former book, and are now offering it to the schools of other states. It is believed that this is the first school history to give proper place to Western development, and the first to accord to woman her historic place.

At the time the call was made for tenders of texts for the introductory history, a call was also made for manuscripts of a brief history of California for the same grades. This call brought a number of manuscripts written by California authors and from among them was selected one written by Mr. Percy F. Valentine, teacher of history and civics in the San Francisco State Normal School, which the history experts advised as best suited to the needs of the children of the state, and this, as finally arranged, has been printed and bound as a supplement to the Mace's History. It is also bound separately in pamphlet form. For the first time, the children of our state have a history of its romantic origin and phenomenal growth written in language suited to their minds, and it is to be hoped that this little History of California will find its way into every private school in the state also.

An interesting study is under way in the preparation of a text to be used in teaching citizenship to adult aliens. There are classes for these in most of the large centers of the state where aliens congregate, and it is expected that, through cooperation with the Immigration and Housing Commission, such a text will soon be provided for uniform use in the schools of the state engaged in this work. This will supply a means of enabling such aliens to pass the examination required before final citizenship papers can be secured and giving them, at the same time, a little grounding in and knowledge of the institutions and civic advantages of their adopted state.

BOOKS IN USE IN THE SCHOOLS.

During the school year from July 1, 1914, to June 30, 1915, there were distributed, as shown in the tables appended, 493,159 school books. During the school year of 1915–1916, there were distributed 491,670. This is a contrast to 1,379,154 for 1913–1914 and 477,933 for the half year beginning January, 1913, when the free distribution commenced. In other words, with 6 per cent average annual increase in school attendance the actual number of books issued has fallen off. The system of free textbooks has not been established long enough to supply a reasonably accurate cycle of their life time, but it may be safely assumed that a large part of the million and three-quarters books issued in the first year and a half of free distribution will soon have to be replaced.

It has been found to be impracticable to issue any instructions regarding the disposition of old or used textbooks. It is impossible to say when a book is too old or worn for use. There is some complaint because of the condition of some of the books in use, but the problem can not be met by any general, or long range rule. There has been no inclination on the part of the schools to be wasteful of books, rather otherwise. A questionnaire sent to the county and city superintendents has revealed the fact that the Primer and First Reader wear out soonest and the books for advanced grades will some of them last five or six years, while three years is a low average for all books in all grades. There is a growing demand among parents and teachers that each child be given his books outright and required to pay for any replacement if lost or damaged. Another call is the old one for publication of texts in pamphlet form, to be given outright to the child. The first plan presents the better method, if it were feasible, as a child would soon lose all respect for a paper covered booklet and thus miss the instruction in the care of and respect for books which should be a part of his education.

GIFT OF TEXTBOOKS TO PUPILS

To see how remote the gift of books to pupils is, please note these figures: On the basis of present attendance, considering the increase per year for the next four years at present rate of increase in school attendance, it can be fairly estimated at actual cost of books to the state that to give the children outright such books as are now published, though at a new cost which must be based on increased cost of of all printing material, would require for the school year 1917–1918 about $389,500, 1918–1919 $413,000, 1919–1920 $437,500, 1920–1921 $464,900. These figures represent an expenditure probably three times the cost of free textbooks by our present method. All the textbooks published by the state in the school year of 1914–1915 cost but $113,558.79. For the year 1915–1916, $115,442.85. Now deduct about 10 per cent for books sold to private schools and parents and then add 50 per cent for the increase cost which will be felt next year, 6 per cent for increase in attendance for each of two years, and it will be seen that an estimate of cost for the year 1917–1918 figured thus would be about $118,000, instead of the estimated cost to give each child his books outright, as shown above, of $389,500.

One way of avoiding the objectionable use of old books in individual cases remains. The parents who object may buy state texts for their children. Reference to statements of expenditures and textbook costs up to this time contained in the appendix of this report can not be used to compare with these figures for the cost of books in future years, because all printing materials have greatly advanced in price. Textbooks printed this year do not show this advance, for the reason that paper and ink stock sufficient for the year was purchased before the rise, which is now more than 50 per cent above last year's costs.

THE BIENNIAL QUESTION, STATE PUBLICATION?

The customary, trivial, interested or selfish criticism of the expense of state publication has gone on, though haltingly. Truth, when given, holds California up to the commendation of the country, but some of her citizens seem to prefer subjecting their state and its institutions to ridicule rather than taking advantage of every advanced idea to show its progress. The State Board of Education was notified some time ago that its books and the cost finding and accounting systems in the state printing office would be thoroughly examined by expert accountants employed by interests antagonistic to the plan of state publication, in an effort to prove the statements regarding California textbook costs to be false. That was a year ago. They were given every assistance in their efforts to obtain the information they sought, but no report of this investigation has ever reached the board nor has it appeared in the press, a sufficiently sure sign that the statements made in the past showing the economy and efficiency of California's state publications to have been true.

HIGH SCHOOL TEXTBOOKS.

The official list of high school textbooks in use when this board was created contained over 1,150 titles. Two years ago this board cut down the number of books on the list and during the past year a very careful study was made to ascertain what texts were in actual use. It was agreed that for 1916–1917 no textbook should be listed as an authorized high school text that had not been in use in five high schools during last year. This action cut the list of texts down again and it now contains only 369 titles, removing the unsightly deadwood which impressed one with the idea that the high schools of California had very lax standards of textbook requirements. Exceptions to this rule as to textbooks listed for the high schools have been made in favor of texts for new subjects or to meet peculiar conditions.

The old large list of textbooks, coupled with a lack of standardization of courses of study among the high schools and a feeling that courses were often changed unnecessarily, causing expense to students and parents, has excited some demand for free textbooks and state publication for high schools. The magnificent success of the free textbooks for elementary schools and the resulting benefit to parents and the printing trade has further excited interest in this movement. The last legislature appointed a joint committee which is at work upon the question and will fully cover the field in its report. But, from our practical experience in textbook publication, we believe it unwise and inexpedient as well as unprofitable for the state to undertake the publication of high school texts.

STATEMENT OF EXPENSE FREE TEXTBOOKS.

There is presented herewith the financial statements of the free textbook accounts as they appear on the books in the office of the State Board of Education, which are in agreement with the accounts in the office of the State Controller. These are dated June 30, 1915, and June 30, 1916, respectively, the close of the last two fiscal years.

Receipts Year 1914–1915.

Balance in schoolbook fund July 1. 1914	$129,906 56
Remainder of original appropriation	200,000 00
Sales during year	6,884 90
	$336,791 46

Disbursements.

State Printer, cost of printing	$69,414 17
Royalties	40,543 58
Freight and postage	3,155 81
Salaries	350 00
Miscellaneous	95 23
Balance	223,232 67
	$336,791 46

Receipts Year 1915–1916.

Balance in schoolbook fund July 1, 1915	$223,232 67
Schoolbook appropriation	250,000 00
Sales during year	6,837 09
	$480,067 76

Disbursements.

State Printer, cost of printing	$74,710 65
Royalties	27,235 08
Freight and postage	2,833 12
Salaries	600 00
Miscellaneous	66 00
Balance	374,624 91
	$480,067 76

MARSHALL DEMOTTE,
MARY G. BARNUM,
AGNES RAY,
GEORGE W. STONE.

REPORT OF THE COMMITTEE ON NORMAL SCHOOL

SACRAMENTO, CALIFORNIA, September 27, 1916.

To the Honorable State Board of Education.

The Committee on Normal Schools was organized in September, 1913, with President William H. Langdon as chairman, and Lawrence E. Chenoweth and Mary G. Barnum as members. No report was submitted in 1915 because legal complications left the jurisdiction of the State Board of Education somewhat in doubt regarding normal schools. It was the wish of the committee not to assume any responsibility that the law did not distinctly impose.

In 1915 the presidents of the California state normal schools presented to the State Board of Education for its approval a proposed bill, which with some minor changes was passed by the legislature and went into effect August 8, 1915. The principal provisions are as follows:

> "(Section 1519). At the joint meeting of this board and the representatives of the normal schools of the state provided for in section 1518*a* of the Political Code, matters affecting the normal schools may be presented by members of the board, by the Superintendent of Public Instruction and the commissioners of education, and by the representatives of the normal schools, and, after due presentation and consideration, the board may adopt rules and regulations for the government of the normal schools in the following matters:
>
> "(*a*) The standardizing, as far as the board shall deem it wise and necessary, of the courses of instruction offered in the several normal schools for the preparation of teachers for the public schools of the state.
>
> "(*b*) The establishing and conducting in any or all of the normal schools of the state of such courses of instruction as shall prepare for the public schools of the state special teachers in any or all of the subjects of drawing, music, physical culture, and commercial, technical or industrial branches.
>
> "(*c*) The compiling and publishing of a list of textbooks for use by the students of the several normal schools of the state; provided, that the state series of textbooks shall be used in the grades and classes for which they are adapted, and that all other regular textbooks shall be selected by the various normal school authorities from said list.
>
> "(*d*) The prescribing of the standards of admission for students entering the normal schools, and the rules for transfer of pupils from one normal school to another; provided, that a student for good cause, may, upon recommendation of the president of the school from which he seeks to be transferred, enter any other

> normal school and without examinations be admitted to classes corresponding to those in the school which he has left.
>
> "(e) The determination of the time and standards for graduation from the state normal schools."

In view of the heavy responsibilities imposed by this new law, the Committee on Normal Schools began active work with anxiety and reluctance, and a sense of keen regret in the resignation of its chairman, Hon. Wm. H. Langdon. Since September, 1915, it has been reorganized, the sole survivor of the original committee appointed chairman, and Mr. George W. Stone and Mr. M. B. Harris members. A grateful sense of confidence comes from the fortunate fact that Mr. Harris is an active trustee of one of the state normal schools and has had illuminating experience as a member of the former Joint Board of Normal School Trustees.

For convenience, this report includes a brief account of normal school matters, but it should be understood that conference and action regarding most of them represent the work of the entire board and its commissioners.

As soon as the law went into effect, an informal conference was held with the presidents of the normal schools (at Oakland, August, 1914). Each was requested to give in general terms—and later to file in detail—information regarding standards of admission, courses of instruction, general and special, lists of textbooks used, and times and standards of graduation. Although there seemed to be wide divergence in some respects, this cordial and helpful conference showed an ardent desire on the part of all concerned to give California's prospective teachers the best possible preparation for their life work. The board was interested to find that the normal school presidents generally expressed the opinion that a three-year period of training might be desirable in the future and might tend to limit the number of graduates.

During the fall and winter a number of urgent problems were brought to the board by the officers of normal schools and of the Board of Control. These were met, so far as immediate action was required. It was felt, however, that arrangements already made by the several normal schools should continue during the school year 1915–1916, and these were formally authorized as follows:

> "Whereas the new law, effective August 8, 1915 (section 1519), provides that the State Board of Education shall adopt 'rules and regulations' for 'the government of the several normal schools of the state' only after an annual meeting with the presidents of the several normal schools (section 1518*a*) 'held to consider and act upon matters pertaining to the several normal schools of the state.'
>
> "Whereas the normal schools of the state are now in session, with their courses of study and textbooks fixed for this year, under

> regulations adopted at the regular meeting of the Joint Board of Normal School Trustees held in April, 1915; therefore,
>
> "It is the opinion of the State Board of Education that the first annual meeting under the new law be held in April, 1916, to adopt 'rules and regulations' for 'the government of the several normal schools of the state,' beginning with the school year of 1916, and that in the interim the *statu quo* be maintained in order not to disturb the conduct of the normal schools of the state in the middle of a regular school year."
>
> "*Resolved, further,* that the provisions of this resolution be interpreted to extend to the courses of study of the several model and training schools, including ninth grade courses of study, where such courses have been established, and that such courses of study be, and the same are, hereby approved for the year ending June 30, 1916."

In preparation for the joint meeting of the State Board of Education and the normal school presidents a number of steps were taken, to insure harmonious and intelligent action concerning admission requirements, courses of study, requirements for graduation and other matters in which standardization was contemplated by the law.

Plans for the meeting were made by the Superintendent of Public Instruction for April 11, 1916, at Los Angeles, at the office of the State Board of Education. A tentative program was prepared in cooperation with the chairman of the normal school presidents—Dr. M. E. Dailey. This program included, under the general subjects stipulated in the law, the topics on which the normal school presidents had requested discussion.

The Commissioner of Elementary Schools was requested to complete her file of catalogues and lists of textbooks; also to secure any additional information desired. All commissioners were requested to visit the normal schools of the state as much as their schedules and itineraries would permit; all the commissioners were requested to give careful study to the matters in which the law contemplated that the state board should adopt rules and regulations after presentation and consideration at the joint meeting.

The board requested the chairman and members of the committee to visit as many of the normal schools as possible, and the chairman found much pleasure and profit in becoming better acquainted with the state normal schools at Chico, San Francisco, San Jose, Fresno, Los Angeles, and—on previous occasion—Santa Barbara and San Diego.

Local school boards employing normal school graduates were consulted where possible, as well as university authorities where such graduates have pursued advance work. University registrars kindly furnished on request valuable statistical tables.

A questionnaire was sent by the Commissioner of Elementary Schools to all county and city superintendents. The prompt and general response afforded much useful information and suggestion. Space forbids including a copy of the questions and complete tabulation of the returns.

The proceedings of the joint meeting, April 11–15, at Los Angeles, will be found in the minutes of the State Board of Education. The Rules and Regulations adopted are as follows:

REGULAR TEACHERS' COURSE.

MINIMUM REQUIREMENTS FOR ADMISSION TO REGULAR TEACHERS' NORMAL COURSE.

I. General qualifications.

Every person admitted as a student to the normal schools of the state must be of good moral character, of good health, without physical or other defect which would impair his fitness for the teaching service, of at least sixteen years of age, and of that class of persons, who, if of proper age, would be admitted to the public schools of the state without restriction.

II. Units.

A unit is hereby defined to be a course of study of five full periods per week, taken for one year of not less than thirty-six weeks. Fractions of units may be accepted and counted.

III. Requirements for provisional undergraduate standing.

(*a*) Graduates of public high schools of California approved by the State Board of Education, graduates of other schools of California recognized by the University of California as qualified to recommend students for entrance to said university, and graduates of schools of secondary grade of other states recognized by the president of the normal school concerned as equal in rank to an accredited public high school of California, who have completed a regular four-year course of study, amounting to not less than fifteen entrance units, and who are recommended in eleven units by the principal of the school in which such course of study was completed, may be admitted to provisional undergraduate standing.

(*b*) Teachers holding valid primary, elementary, kindergarten-primary or special certificates to teach in any county of the state may be admitted and given such provisional undergraduate standing as may be determined by the faculty of the school.

(*c*) Holders of normal school diplomas or certificates granted in other states, who present satisfactory evidence that they have had training equivalent to that required for admission to the normal schools of this state, may be admitted and given such provisional undergraduate standing as may be determined by the faculty of the school, provided that at least four units shall be required for graduation.

(*d*) Applicants for admission who present more than sixteen units of credit, or who have had advanced work in a postgraduate course in a high school, or in any institution of collegiate grade, may be admitted and given such provisional undergraduate standing as may be determined by the faculty of the school, provided that at least four units shall be required for graduation.

(*e*) Holders of bachelors' degrees issued by institutions authorized by the State Board of Education to recommend applicants for the high school teacher's certificate and holders of bachelors' degrees issued by American colleges and universities which are on the latest accredited list of the Carnegie Foundation, may be admitted and given such provisional undergraduate standing as may be determined by the faculty of the school; provided, that such persons may be graduated only after completing a minimum of two and one-half units of professional work in the normal school.

(*f*) Persons over twenty-four years of age, not possessing the credentials prescribed above, may be admitted to provisional undergraduate standing on such special qualifications of character, education and general intelligence as may, in the judgment of the faculty of the normal school concerned, be equivalent to any of the above requirements; provided, that such persons may be graduated only after completing a minimum of two and one-half units of professional work in the normal school.

(*g*) A student received by transfer from another California state normal school shall not be graduated until he has completed at least two full units of work in the period immediately preceding graduation.

(*h*) Persons who have satisfied the president of the normal school concerned that they have completed a high school course or the equivalent, and who have passed acceptable examinations in eleven units of high school work, may be admitted to provisional undergraduate standing. Only the examinations given for admission to the University of California or any other institution in California authorized by the State Board of Education to recommend applicants for the high school teachers' certificate and the examination given by the college Entrance Examination Board, shall be accepted as meeting this requirement.

IV. Requirements for full undergraduate standing.

Students who have fulfilled the requirements for provisional undergraduate standing, and who have passed a satisfactory examination in reading, writing, spelling, English grammar, composition, arithmetic, and geography, or who have completed the course or courses provided in these subjects in the normal school, may be admitted to full undergraduate standing. Such examination shall be given not later than the end of the first half-year after entrance into the normal school. Should the student fail to pass a satisfactory examination in any of these subjects, such student shall be remanded to a regular high school or normal school class offering work in the subject or subjects in which he has failed. In order that the standards of proficiency maintained in these subjects shall be uniform throughout the state, the State Board of Education shall from time to time adopt regulations governing such examinations. A graduate of a normal school or the holder of a bachelor's degree, or a teacher holding a certificate of elementary grade may be excused from any or all of the above examinations by the faculty of the normal school concerned.

MINIMUM REQUIREMENTS FOR GRADUATION FROM THE REGULAR TEACHERS' COURSE.

No student shall be admitted to candidacy for graduation who has not been admitted to full undergraduate standing.

Before graduation, each candidate must complete credit courses beyond a complete elementary school course as follows:

General requirements.

Normal School Equivalents		Units
36	*English Literature and Language, including grammar, composition and oral expression	2
18	*Physical Science—One year of general science, including the applied elements of physics, chemistry and physical geography, or one year of physics or chemistry or physical geography, provided that for students entering after June 30, 1918, the general science shall be prescribed	1
18	Biological Science, including physiology, hygiene and sanitation	1
18	*History of the United States and Civics, including local and state government	1
36	*World History	2
18	Drawing and Painting, including applied design	1
18	Music, including sight reading, two-part singing, and elementary harmony	1
18	Manual Training or Household Arts or Elements of Agriculture, including practical work in gardening, floriculture and plant propagation, one unit, provided that for students entering after June 30, 1919, one unit shall be required in Manual Training or Household Arts, or both, and one unit in Elements of Agriculture, including practical work in gardening, floriculture and plant propagation	1
18	*Mathematics, including general mathematics or the applied elements of algebra or plane geometry, or commercial arithmetic	1
Professional requirements.		
9	**Elements of Applied Sociology, including the study of institutions and social organizations, rural life and rural school problems	½
18	**Education, including a study of the school as an institution and the curriculum, general psychology applied to education and general method	1

*Must be taken in a high school.
**Must be taken in a normal school.

49½	**Practice Teaching and Special Methods which shall familiarize the student with and give him a mastery of the state series of textbooks, and which shall in addition thereto include special methods in all of the required statutory subjects; provided, that at least one (1) unit shall be given to practice teaching and at least one-third of the total time given to practice teaching shall be in a classroom, by the classroom method and under direct supervision	2¾
4½	**The California School System, School Law, and their development	¼
9	**Physical Education, Athletics, Play, School Playground Equipment, and Indoor and Outdoor Recreation	½
144	Possible Electives	8
126	Possible Electives for those entering after June 30, 1918	7
432	Minimum units required for graduation	24

Students entering under the provisions of III (*a*), Part II above, must complete at least three of the possible elective units in the normal school.

Elective units secured in normal schools may include any of the unstarred subjects listed under "Requirements for Graduation."

Commercial, industrial and economic history, or commercial and industrial geography, or any combination thereof amounting to one unit, may be offered in lieu of one unit of world history.

A student of a normal school serving as a student teacher shall receive credit only for teaching done in a normal training school, or as an assistant to a regularly certified teacher who shall supervise the work.

All normal schools of this state, other than the Santa Barbara State Normal School of Manual Arts and Home Economics, must maintain class instruction in all of the courses listed under the subheading "Professional Requirements."

These regulations shall become effective for students entering normal schools after January 1, 1917.

SPECIAL TEACHERS' COURSES.

MINIMUM REQUIREMENTS FOR ADMISSION TO SPECIAL TEACHERS' NORMAL COURSES.

Any person having the qualifications prescribed for provisional undergraduate standing in the "Regular Teachers' Normal School Course" may be admitted to the special teachers' courses maintained by any of the state normal schools other than the Santa Barbara State Normal School of Manual Arts and Home Economics.

Any person who submits evidence of having completed in a satisfactory manner a minimum of two full years of academic or professional training beyond a high school course may be admitted to any of the special teachers' courses maintained in the Santa Barbara State Normal School of Manual Arts and Home Economics.

**Must be taken in a normal school.

Persons who satisfy the faculty of the normal school concerned that they have qualifications equivalent to any of the above requirements, may be admitted into special courses in such normal schools as are authorized to train teachers in special subjects, provided that they pass an examination in oral and written expression. These students may be given such standing as may be determined by the faculty of the school involved.

MINIMUM REQUIREMENTS FOR GRADUATION FROM SPECIAL TEACHERS' COURSES.

The minimum requirement for graduation in any special subject or in any group of special subjects shall be the minimum requirement specified in the regulations established by the State Board of Education August 21, 1915, for the government of educational institutions accredited to recommend individuals for special certification, as set forth in Bulletin 10.

KINDERGARTEN TEACHERS' COURSE.

MINIMUM REQUIREMENTS FOR ADMISSION TO AND GRADUATION FROM KINDERGARTEN-PRIMARY COURSE.

The regulations and requirements for admission to and graduation from Kindergarten-Primary Course shall be the same as those established for entrance to and graduation from the Regular Teachers' Normal Course, with the following modifications and additions:

Modifications.

The one required unit of education shall include at least one-half unit of professional work which shall deal with the principles and theory of kindergarten and child life.

The two and three-fourths units of practice teaching and special methods need not include methods and practice teaching in subjects not taught in the first two grades of the elementary school, but shall include principles and theory of kindergarten and child life.

One-half of the minimum requirement in practice teaching shall be in a kindergarten, the other half in a first grade.

Additions.

At least one-half unit in physical education in addition to that specified for elementary teachers shall be required. This additional work shall be given with special reference to kindergarten plays and games.

One-fourth of a unit in primary and kindergarten literature and story-telling shall be required.

One-half unit in primary and kindergarten handwork shall be required.

One-half unit of special kindergarten music, including piano playing, shall be required, and no student may be admitted to the Kindergarten-Primary Course who can not play simple melodies, songs and marches upon the piano.

STATE BOARD NORMAL SCHOOL REGULATIONS.

Many inquiries have been received regarding the interpretation and application of these, and conferences held with officers and members of the faculty and boards of trustees of normal schools. The questions have been carefully considered by the committee, the commissioners and the board, and copies of responses sent to normal schools and kept on file.

Hearty expressions of approval have come from high educational authorities, who very kindly say that the provisions are ''admirable,'' ''constructive,'' will ''without doubt improve elementary teaching in the state'' and that they set advance ''pioneer'' standards for many of the normal schools of the East.

It is impossible to discuss here many of the excellent features of the plan. Probably the most important single feature is its requirement throughout a six-year period of work that has distinctly professional value. Concerning this requirement two things should be noted.

First, it can be met readily by students in our California high schools. The Commissioner of Secondary Schools reports that ''All the high schools are offering courses that satisfy the minimum requirements fixed by the state board for admission to the normal schools.''

Second, the high school preparation indicated is highly desirable, not only for improved elementary teaching, but also for genuine educational preparation for life. Shortly after the ''Requirements'' were adopted, Bulletin No. 10, 1916, was received from the United States Bureau of Education, including ''Needed Changes in Secondary Education,'' by Charles W. Eliot, President-Emeritus of Harvard College.

Dr. Eliot says in part:

> ''The best of all human knowledge has come by exact and studied observation made through the senses of sight, hearing, taste, smell, touch. The most important part of education has always been the training of the senses through which that best part of knowledge comes.
>
> ''The programs of secondary schools in the United States allotted only an insignificant portion of school time to the cultivation of the senses through music and drawing. As a rule the young men admitted to American colleges can neither draw nor sing; and they possess no other skill of eye, ear, or hand.
>
> ''Many highly educated American ministers, lawyers, and teachers have never received any scientific training, have never used any instrument of precision, possess no manual skill whatever, and can not draw, sing, or play on a musical instrument. Their entire

> education has dwelt in the region of language, literature, philosophy, and history, with a brief excursion into the field of mathematics. Many an elderly professional man, looking back on his education and examining his own habits of thought and of expression, perceives that his senses were never trained to act with precision; that his habits of thought permit vagueness, obscurity, and inaccuracy, and that his spoken or written statement lacks that measured, cautious, candid. simple quality which the scientific spirit fosters and inculcates.
>
> "It is high time that the American school—urban or rural; mechanical, commercial. or classical; public, private, or endowed—set earnestly to work to repair this great loss and damage.
>
> "If the elementary and secondary schools served well boys and girls from 6 to 18 years of age, the main reform would. in time, be accomplished.
>
> "The changes which ought to be made immediately in the programs of American secondary schools, in order to correct the glaring deficiencies of the present programs, are chiefly the introduction of more hand, ear, and eye work, such as drawing, carpentry, turning, music, sewing, and cooking; and the giving of much more time to the sciences of observation—chemistry, physics, biology, and geography, not political, but geological and ethnographical geography."

We may well feel satisfaction in noting that the admission requirements which we adopted a few weeks previous to the publication of this bulletin are the virtual embodiment of the ideal here set forth. If difficulties persist, we may take additional courage from the statement in the same bulletin by Ernesto Nelson, Director of Secondary Education, Argentina:

> "Considering that Dr. Eliot's plea is being duplicated in every civilized country of the world. and that it is not a new plea, it does seem wonderful that the realization of the ideal it expresses should still demand the combined efforts of the foremost educators of all lands."

Although the State Board of Education did not propose the new law contemplating the standardization of normal schools in certain respects, it has been interested to find that the measure seems to be in accord with the needs and tendencies of the time in the development of educational systems. Commissioner P. P. Claxton of the United States Bureau of Education says in his Letter of Transmittal to Bulletin 10, 1916, entitled "Problems Involved in Standardizing State Normal Schools":

> "Because of the large expenditures for normal schools and a growing appreciation of the importance of their place in our systems of public education, there is an increasing general desire for some intelligent accounting of their organization and work."

In the body of the bulletin similar statements are made, as the result of experience and investigation. Among these are the following:

Chapter IV, Section I, "A Study of State Normal School Control." Conclusion I:

> "The results of any study of this nature are only further evidence, but not unquestioned, of the general tendency toward administrative centralization. The tendency of recent legislation is evidence of the general movement to centralize responsibility and power in normal school control, and, in fact, in all educational matters."

President G. E. Maxwell, of the Winona State Normal School, of Winona, Minn., summarizes the advantage of control by a single state board for normal schools, in the paragraph:

> "Our unit board for all normal schools has proved a very excellent arrangement. It serves to bring a well-conceived and harmonious budget to the legislature, which has not failed in several sessions to appropriate every cent asked for. It unifies the schools, prevents unsafe and disorganizing forms of competition for students, maintains uniformity of standards of admission, instruction and graduation."

Mr. Charles D. Hine, secretary of the Connecticut state board, says, of a different condition:

> "There is no state supervision of the normal schools. The principals substantially control the schools. They are not in accord except in the strong purpose to be unmolested."

Commissioner of Education David Snedden, in commenting on the Massachusetts system, says:

> "My conviction is that the training of the teachers for the public schools of any particular state should be under one authority, even though several schools distributed through the state are devoted to the work. It might be well to have local advisory committees of citizens."

In the introduction by Charles Hubbard Judd, director of the School of Education of the University of Chicago, he says:

> "Costs of educational organizations are so high and the volume of educational activity is so great that society is demanding as never before a reasonable accounting. In the meantime, the scientific methods of studying educational results have been so far perfected that the inquiry into educational efficiency can be made most pointed. Normal schools can not longer be isolated, even if they will. Society at large is interested in them as in other institutions."

The president of the Carnegie Foundation has stated that

> "Little by little the states of the nation are realizing the oneness of the educational undertaking which faces them and are discovering that they can expect to cope successfully with it only by creating a skillful and mobile central authority to operate and control the entire undertaking. Of this great single educational enterprise in each state, the portion that is most vital, that overtops all else in its decisive importance, is that of selecting and training teachers. The solution of the state's problem as a whole is measured largely by the solution of this portion of the problem. It is emphatically a state task today and will doubtless permanently remain so."

California has reason to be proud of her normal schools, and of her generosity in providing, equipping and supporting them. Our eight California normal schools represent an investment of $2,696,149. Their total annual budget for 1915–1916 was $995,508.98. Their faculties numbered 267, one school alone having between 90 and 100. They had in training last year 7,789; 3,163 in the model and training schools and 4,626 in the normal departments. This number is amply sufficient to provide trained teachers for the elementary schools of the state—a happy condition to which few Eastern states approximate.

In the words of our president: "A larger percentage of the teachers of California than any other state have had the advantage of normal training, and this fact is without doubt largely due to the efficiency of our normal schools and the superior advantages they offer."

Respectfully submitted,

MARY G. BARNUM,
M. B. HARRIS,
GEORGE W. STONE.

BIENNIAL REPORT OF THE COMMITTEE ON CREDENTIALS.

To the Honorable State Board of Education:

The scope of the work of the Committee on Credentials has been greatly increased during the last two years. First, as a matter of convenient reorganization, three committees were consolidated, and the credential committee was given charge of health and development certification, examinations, and life diplomas and documents.

Second, as a result of amendatory legislation (§1519, Fifth, *c* and *d*) most of the difficult and perplexing work of providing credentials for teachers of special subjects passed from the offices of fifty-eight county boards to the office of the State Board of Education. The credential committee, the board, and, most of all, the commissioners, have felt the burden and borne it sturdily. When standards have been established, methods of investigation determined, and institutions accredited, it is hoped that county boards will pass directly on the qualifications of most applicants for special certificates, as they do on those of most applicants for high school certificates. This hope may be deferred and many cases continue to require individual consideration by the state board, because of the diversity of desirable qualifications in special subjects and the introduction of new courses in up-to-date schools. To facilitate matters by making it possible for two committees to work simultaneously, applications for credentials in special subjects will henceforth be considered by the Vocational Committee. (See the report of the Vocational Committee, page 199, and Regulations Governing Educational Institutions Accredited to Recommend Individuals for Special Certificates and Certification of Teachers of Special Subjects, page 259.)

STATE BOARD HIGH SCHOOL CREDENTIAL.

In connection with high school credentials, there have been several gratifying developments of general interest, which compensate for the steady grind of exacting detail—the reviewing of applications during committee and board meetings and the interviewing of applicants at very frequent intervals between, at home and office.

One encouraging fact is the increasing number of California teachers who consult the committee and high school commissioner, and, in consequence, pursue advance studies, raise their certification and increase their usefulness; elementary teachers add a year and secure intermediate permits; or three years and secure secondary credentials; or, having bachelor's degrees, pursue summer sessions, Saturday classes or correspondence courses, and complete the requirement for secondary certification. Special teachers with college equipment add necessary academic graduate credits and secure full secondary certification to meet the needs and opportunities of the small high school. This sort of ambitious effort augurs well for the schools of California; the growing teacher, the teacher who is also a student and maintains an eager student attitude with her classes has a quickening influence and unique power over them. The new high school laws and the high school commissioner's keen and kindly supervision have afforded opportunity and reward for such effort, and the commissioner has excellent practical devices, as well. For instance, the high school reports and directory require statements of exact certification, subjects taught and subjects allowed on certificates, if special. The classification accompanying every teacher's name is a powerful stimulant. (A, full certification;

B, special certification; C, temporary certification; D, elementary certification.)

Another welcome feature is the increasing evidence that high school education is being made more responsive to community and life needs through agencies recently set in operation and under the guidance of the commissioners and the board—through their approval of high school courses of study, through the resulting legal recognition of industrial and vocational courses, and through certification of special and vocational types.

Standard raised.

Particularly gratifying to the board and its committee have been expressions of confidence and praise received from educational authorities for strictly maintaining a high standard in the issuance of state board high school credentials and for taking several steps in advance during the last two years, as follows:

First, work done in summer sessions has been scrutinized, as well as that done during the semesters of a college year. Only advanced courses of junior, senior and graduate rank may be counted toward the advanced work required for the credential.

Second, the word ''equivalent'' in the requirements has been a wide door of hope to applicants—often false and leading down to disappointment. This provision of equivalents has been strictly interpreted and a safe plan of procedure instituted. Wherever the candidate does not hold an academic degree, the committee has required that his record of training and verifying evidence be submitted to the education department of one of the accredited universities; the committee has accepted the advice of these authorities in reference to the acceptability and adequacy of the candidate's preparation; usually persons with bachelor's degrees from unlisted institutions are required to secure a recognized rating in this way. ''Equivalents'' for graduate credit are often submitted to the head of the graduate department in an accredited university; an accurate evaluation is thus secured for credentials from foreign or little known institutions and for any intricate or unusual evidence.

Third, the committee has declined to count more than six units of work in special branches toward the half year of postgraduate work required of those who hold the bachelor's degree.

Fourth, the committee has declined to accept any courses in law, medicine and theology as meeting the requirement of postgraduate work except courses so general in their nature that they might be accepted as nonprofessional work.

Fifth, the half year of postgraduate work is construed by the committee to mean a full semester of credit according to the rules for full credit in the institution where the work is taken, or two full summer sessions according to the rules for maximum summer session credit in the institution where the work is taken.

Sixth, the policy of the committee will hereafter be to require all applicants for the state board high school credential, whose degrees were granted before 1895, to present evidence of recent teaching experience in institutions of high school grade, or at least six units of advanced work of collegiate grade, within five years preceding the date of the application.

The policy of the committee will hereafter be to limit to two years all high school credentials granted to candidates who have not had (*a*) at least 20 months of successful experience in teaching in California, and (*b*) at least 20 months of successful experience in teaching in secondary schools.

Number of state board high school credentials issued: July 1, 1914, to June 30, 1916, 349.

REVISED RULES GOVERNING HIGH SCHOOL CERTIFICATION BY COUNTY BOARDS OF EDUCATION.

Finally, and of far-reaching effect, by revising the rules governing high school certification by county boards of education the board has greatly promoted the professional training of teachers.

It has encouraged and aided in every possible way the establishment of the University High School for supervised practice teaching, and is interested in the outlook for better practice teaching facilities at Stanford University.

It has adopted the following provisions and amendments to the previous regulations:

> The regulations governing the issuance of high school certificates in this state, adopted June, 1914, and published as Bulletin 5, are amended as follows:
>
> *First*—Amend page 4, section 2, of Bulletin 5, to read as follows: "*Full Regular Work.* The department of education of the institution in which the graduate work is done shall define what constitutes full regular work, referred to in requirement two."
>
> *Second*—Amend page 5, section 7, to read as follows: "*Basis of Recommendation.* The department of education of each university shall fix the standard of requirement in the several subjects, and each program as a whole must be approved by the Department of Education."
>
> *Third*—On page 7, section 3, after the period in line 5, insert the following sentence: "All recommendations granted to candidates who have not had at least 20 months experience in teaching shall be limited to expire two years after the date of issuance, and shall be renewed only upon recommendation of the State Board of Education.

> "In recommendations for the high school certificate issued in accordance with III, 5 above, the university, through its recorder or registrar, shall vouch for the undergraduate work of the candidate; the head of the department of education in the university shall vouch for the courses in education and the state librarian shall vouch for the postgraduate work.
>
> "A recommendation granted by any approved graduate school, other than the University of California, Leland Stanford Junior University and the University of Southern California, shall not be valid unless approved on its face by the Commissioner of Secondary Schools."
>
> *Fourth*—Insert after paragraph 4, page 6, the following:
>
> "(5) Holders of bachelor's degrees granted by the University of California, Leland Stanford Junior University and the University of Southern California, who have completed the required fifteen units of work in education, including practice teaching, and who have completed one major and one minor in subjects taught in the high schools of the state, may elect to spend such year in postgraduate study in the California State Library School, following a course especially selected for college graduates preparing for high school certification in this state, provided that each candidate entering the California State Library School shall first secure the approval of the head of the department of education of the university from which he expects to be recommended for the high school certificate.
>
> "A major is hereby defined as not less than twenty-four units of work in a subject, of which twelve units must be in advanced courses.
>
> "A minor is hereby defined as at least six units of work in advanced courses.
>
> "Only advanced courses taken during the junior, senior and graduate years shall be counted toward the advanced work required."

These provisions have the effect of increasing professional requirements and making them more specific; of giving the appropriate departments of education control over the programs of prospective teachers; of encouraging the development of real professional schools of education with dignity at least equal to those of law, medicine, engineering and theology.

Probably the greatest additional safeguard is that just established, requiring a probationary period of two years, and under a limited certificate, for all teachers who have not had two years of successful experience in California, in the secondary schools, and in recent years. This will involve considerable "follow-up" work for the secondary commissioner and his office, but it will be a most important service; will put a premium on well-doing, and eliminate the unsuccessful and unfit.

In consequence of these standards and provisions and the thorough way they are administered, we have excellent reason to believe that the high school teachers of the state are better trained than they were a few years ago, and better trained than those of any other state.

EXAMINATIONS FOR STATE BOARD HIGH SCHOOL CREDENTIAL.

In accordance with the regulations of the board, examinations for the state board high school credential have been held annually, during the month of May. Examinations were conducted at Los Angeles and Sacramento simultaneously. All questions used in the examinations were prepared by experts, who also graded the papers. Twenty-six persons appeared for examination during the biennial period. Of this number twenty-one were successful and were granted the state board high school credential. Five failed to attain the minimum standing fixed by the board and were denied the credential.

LIFE DIPLOMAS AND DOCUMENTS.

In accordance with special provisions in the law governing the method by which a teacher may secure a life diploma of the different grades issued, or a document, the committee has submitted carefully prepared lists of applications recommended by county boards of education in the state, for ratification by the State Board of Education. The process is formal for the most part, involving accurate checking of experience and certification. In connection with life diplomas in special subjects, however, a new and important requirement has been made, to the effect that county boards should recommend for life diplomas in special subjects only those teachers whose equipment meets the present increased standard of the State Board of Education for elementary and secondary certification in special subjects. Otherwise a life diploma, which is good in any county, might be issued in accordance with a low or inadequate standard which may formerly have prevailed in some one county.

Number of life diplomas granted:

June 30, 1914, to July 1, 1915	490
June 30, 1915, to July 1, 1916	884
Total	1374

HEALTH AND DEVELOPMENT CERTIFICATION.

Health and development certification has continued without change of policy. While the law under which these credentials are granted is far from perfect, it would be extremely difficult to find improvements on which all the patrons of the public schools would agree. Any attempt to legislate on the subject would probably cause useless controversy. Moreover, the existing law is permissive only, and sufficiently elastic to permit local authorities to meet local needs. Recent investigation and conference have shown that this law permits much valuable work under the control of school authorities which would otherwise be lost or done under the control of boards of health. The committee recommends, therefore, that the law be not changed at this time.

The number of Health and Development Certificates granted between July 1, 1914, and June 30, 1916, was 34.

NO SPECIAL CREDENTIAL FOR SCHOOL NURSES.

The committee recommends further that no special certification for school nurses be instituted, since we are informed on excellent authority that local school boards and boards of trustees may legally and confidently employ nurses who are registered by the California State Board of Health, Bureau of Registration of Nurses.

Respectfully submitted.

E. P. Clarke,
C. A. Whitmore,
Mary G. Barnum.

REPORT ON SPECIAL CERTIFICATION BY COMMITTEE ON VOCATIONAL EDUCATION.

To the Honorable State Board of Education:

The 1915 session of the California legislature placed upon the State Board of Education responsibility for certification of teachers in special subjects. This was a task not sought by the board. Prior to that time certificating was done by county boards of education on educational requirements of their own making. The result was a wide variation in standards—so wide, in fact, that the certificates of one county frequently would not be recognized by the educational authorities of another. For years this situation had proved unpleasant to teachers and unprofitable to education. In general, no distinction was made between the elementary and secondary grade of certificate, and the average educational requirement was two years preparation beyond a secondary school. Only San Francisco, Los Angeles, and Alameda counties approximated the present standards of the state board, which are three years preparation beyond the high school for the elementary certificate, and four years for the secondary certificate, one-half of which in each case must be in the special subject and the pedagogy thereof.

With the rapid spread of special subjects in school curriculums, the situation regarding special certificates became increasingly difficult, but no solution offered until the organization of the present board presented the opportunity for shifting the entire burden of special certification upon a central authority. The proposal to transfer special certification to the state board originated with the California Council of Education and was endorsed by the convention of city and county school superintendents held at Riverside in the fall of 1914. The necessary bills were framed and urged upon the legislature by representatives of the teaching profession of the state.

STUDY OF PROBLEM.

After the passage of the law, and before making regulations covering the granting of credentials in special subjects, the board authorized a study of the problem by the three State Commissioners of Education, and gave over an entire week's session of the board in August, 1915, to hearing views of the state commissioners, the state normal school presidents, and city and county school superintendents.

The state board also consulted national and eastern educational authorities on the problem, among whom were P. P. Claxton, United States Commissioner of Education; Carroll G. Pearse, president of the board of trustees of the National Educational Association and president of the Milwaukee Normal School; and Elmer E. Brown, formerly head of the department of education of the University of California, and now chancellor of the University of New York City. These authorities admitted that the state board was working in virgin educational soil, and that there were no established standards for special teacher preparation which it might consult with any degree of assistance or satisfaction. From the evidence received it appeared that California in 1915 was again engaged in pioneering—this time in education, as in 1849 our people pioneered for gold, and in more recent years have lead the nation in blazing a way in social and governmental reforms.

The board found a strong demand for a higher standard of special teacher preparation than had prevailed generally in the past, and a need for recognition of two kinds of special teachers: first, the practical man, taught in the school of experience, who would give instruction of a strictly vocational character; and, secondly, the teacher whose preparation was largely theoretical and academic, and who would give instruction of a prevocational or cultural type.

STANDARDS ESTABLISHED.

The board found that through the establishment of standard educational requirements, and the accrediting thereunder of a limited number of high grade institutions preparing special teachers, that the board could preserve standardization, at the same time complying with that section of the law which provides that county boards of education may grant special credentials under rules and regulations made by the state board. County boards, therefore, are now granting county certificates to such candidates as present original credentials from the proper authorities of educational institutions authorized to certify to the qualification of such individuals, providing their credentials first had been countersigned by the secretary of the state board.

To facilitate the intelligent and rapid handling of applications for special credentials, the board established, for both the elementary and secondary grade, seven general types of credential, as follows: Manual and fine arts, technical arts, household arts, vocational arts, commercial subjects, physical culture, and music. All candidates who are unable to meet the standard requirements, and thus secure their certificate directly from the local county boards of education, are obliged to present their cases to the State Board of Education.

In detail, the regulations covering educational institutions accredited to recommend individuals for special certificates, and certification of teachers of special subjects, are contained in Bulletins 10 and 11, attached to this report as addenda.

WORK OF THE COMMISSIONERS.

As special teachers are closely allied with vocational instruction, the details of this work were assigned to the Commissioner of Vocational Education, who, cooperating with the other state educational commissioners and the Superintendent of Public Instruction, prepares digests and examines the evidence of preparation and educational equivalents submitted by each applicant, before presenting the cases to the committee on special credentials for final action.

The consideration of special credentials is made an exceedingly intricate and technical problem by the vast variety of evidence submitted, such as diplomas and study courses of a large number of educational institutions, a wide range of occupations, private instruction, practical experience, teaching experience, foreign travel and personal research. It has involved the examination of the standing of educational institutions, the verification of evidence and securing letters of a confidential nature regarding the character, accomplishments and success of each applicant. The amount of this detail, with an average of 500 applications per quarter, can readily be imagined. Considering the intricacies of the problem, the success of the board in maintaining standards is a matter for congratulation. The board has granted credentials, unlimited as to time, only in cases where both preparation and teaching experience are absolutely clearly proven. All other cases are given a limited credential, from one to two years, which permits examination of actual performance in school before the final, unlimited document is issued. In music and art, consideration of equivalents has been extremely difficult and the state board has resorted, in several cases, to examination by recognized musical supervisors, to determine the probable ability of the applicant to teach public school music.

The labor involved has been enormous, taking up in routine work altogether too much time of a commissioner whose constructive services are needed in the field, fostering and elevating the direct-to-life courses which are the special province of his office, and which year by year are becoming a more important and vital part of common school education. We believe that the flood tide of applications for special credentials now has passed, and that in the future the burden will be less onerous. Some idea of the responsibility placed upon the state board and commissioners in the handling of special credentials can be gathered from the fact that since the new law became effective over 2,000 applications have been examined and acted upon, although only 841 individuals have been granted certificates.

TABLE OF CREDENTIALS ISSUED.

Manual of Fine Arts Type Subjects.

Elementary.	
Manual Training	10
Instrumental Drawing	7
Arts and Crafts	9
Free-hand Drawing, Painting and Design	19
Secondary.	
Woodwork	97
Instrumental Drawing	105
Arts and Crafts	98
Free-hand Drawing, Painting and Design	102
Ironwork	34

Technical Arts Type Subjects.

Elementary.	
Instruction of Deaf Children	3
Oral and Dramatic Expression	5
Agriculture	1
Secondary.	
Engineering	27
Instrumental Drawing	13
Applied Electricity	4
Machine Design	2
Agriculture	21
Farm Mechanics	3
Landscape Design	1
Architecture	5
Oral and Dramatic Expression	24
Library Craft, Technique and Use	21
Journalism	3
Advertising	1
Machine-shop Work	8
Machine Design	2

Household Arts Type Subjects.

Elementary.	
Household Science and Economy	13
Household Art and Economy	13

Secondary.

Household Science and Economy	72
Household Art and Economy	81
First Year Sewing	1
Sewing	4
Art Needlework	1
Millinery	1

Commercial Type Subjects.

Elementary.

Stenography and Typing	4
Bookkeeping	4
Penmanship	3

Secondary.

Stenography and Typing	135
Bookkeeping	114
Penmanship	34
Banking and Finance	6
Salesmanship	7
Commercial Law	2
Commercial Spelling	1
Typing	1

Physical Culture Type Subjects.

Elementary.

Physical Education and Training	3
Play and Playground	6
Gymnasium	3
Athletics	4

Secondary.

Physical Education and Training	54
Play and Playground	34
Gymnasium	10
Athletics	52
Cadet Drill	15

Music Type Subjects.

Elementary.

Vocal Music	20
Instrumental Music	18
Orchestral Music	11
Band Music	2

Secondary.

Vocal Music	138
Instrumental Music	38
Orchestral Music	88
Band Music	14
Choral Music	4

Vocational Arts Type Subjects.

Elementary.

Agriculture	1
Gardening	1
Dressmaking	2
Sewing	3
Needlework	1
Cooking	1

Secondary.

Bench and Cabinet Work	16
Woodworking Machinery and Wood Manufacture	11
Ironwork	1
Carpentry	15
Instrumental Drawing	3
Wood Turning	3
Pattern Making	8
Free-hand Drawing	1
Molding and other Foundry Work	1
Machine Shop Work	7
Automobile Repairing and Construction	5
Machinery Installation, Care and Repair	1
Blacksmithing	1
Applied Electricity	4
Agriculture	2
Shoemaking	1
Printing	10
Bookbinding	1
Journalism	3
Photography	1
Bookkeeping	1
Commercial Economics	1
Commercial Law	1
Dressmaking	11
Sewing	9
Tailoring	7
Needlework	3
Dress and Costume Design	2
Millinery	12
Electrical Salesmanship	1
Mechanical Drafting	1
Engineering	2
Engine and Machine Construction	1
Installation of Machine and Shop Equipment	1
House Designing	1
Concrete and Cement Work	1
Machine Design	1

Summary.

The above segregation does not represent the number of credentials granted by the State Board of Education. In many instances two or more subjects were included in a single credential. The actual number of special credentials of each type granted is as follows:

	Elementary	Secondary
Manual and Fine Arts	17	131
Technical Arts	7	53
Household Arts	11	65
Commercial	4	129
Music	17	141
Physical Culture	5	52
Vocational Arts	5	60
Manual and Fine Arts and Vocational Arts	--	15
Manual and Fine Arts and Household Arts	1	9
Manual and Fine Arts and Physical Culture	3	6
Manual and Fine Arts and Technical Arts	--	21
Manual and Fine Arts and Commercial	1	13

	Elementary	Secondary
Manual and Fine Arts and Music	8	18
Technical Arts and Physical Culture	1	17
Music and Commercial	--	4
Technical Arts and Music	1	---
Music and Physical Culture	--	1
Physical Culture and Commercial	--	3
Household Arts and Music	--	4
Household Arts and Physical Culture	--	2
Household Arts and Commercial	1	2
Technical Arts and Vocational Arts	--	5
Household Arts and Vocational Arts	--	1
Manual and Fine Arts, Technical Art and Vocational	--	1
Manual and Fine Arts, Commercial and Vocational	--	1
Manual and Fine Arts, Technical Arts and Physical Culture	--	1
Technical Arts, Commercial and Physical Culture	--	1
Commercial, Physical Culture and Music	--	1
Music, Technical Arts and Physical Culture	--	2
Total	82	759

A number of temporary special credentials have been reissued; also, in a few cases, both elementary and secondary credentials have been granted to the same individual, and in some other cases a second credential has been granted in order to qualify the individual to teach a subject not included in the previous credential issued. Thus the total number of credentials listed above does not represent the total number of individuals having received special credentials, but somewhat exceeds that number.

The standardization of requirements for special teacher certification has received cooperation and encouragement from the state normal schools and California universities. Knowing what they may depend upon in the way of standards, several of these institutions have introduced courses for preparation of special teachers in accordance with state board requirements, while other have augmented courses already existing. The special teacher no longer drifts into her specialty by educational or temperamental accident. It is now more difficult to attain to a special certificate than it is to secure an elementary certificate. While a student, properly prepared in the high school, may receive an elementary certificate after two years normal instruction, the elementary special teacher must spend three years, and for a secondary special must spend four years, in her educational preparation.

The problem of special certification and vocational education is handled fully in the report of Dr. E. R. Snyder, Commissioner of Vocational Education, who has had the most intimate work in connection therewith. In general, the situation has been vastly improved by the standardization enforced by the State Board of Education, and educators appear to be satisfied with the manner in which a difficult problem has been solved.

CHAS. A. WHITMORE,
AGNES RAY,
M. B. HARRIS, Chairman,
Committee on Vocational Education.

REPORT OF COMMITTEE ON ACCREDITATION.

To the Honorable State Board of Education:

In addition to the investigation of the fitness of certain schools outside the state to receive the recommendation of the State Board of Education, as required by law, this committee has made investigations concerning the qualifications of institutions both in California and elsewhere to recommend candidates for certification in special subjects.

There are four classes of schools requiring investigation:

First, graduate schools, the credits of which may be accepted for the graduate work required for regular high school certificates; second, normal schools, the diplomas of which may be accepted in granting elementary certificates; third, kindergarten training schools, the graduates of which may receive kindergarten primary certificates; fourth, institutions authorized to certify to the fitness of persons to receive special certificates.

This work obviously requires expert professional skill. Therefore, all investigations have been placed in the hands of the commissioners of the board—the Commissioner of Secondary Schools taking charge of those pertaining to graduate schools, the Commissioner of Elementary Schools taking charge of those pertaining to normal schools and kindergarten training schools, and the Commissioner of Vocational Education directing investigations of institutions authorized to certify to the fitness of persons to receive special certificates.

APPROVED GRADUATE SCHOOLS.

Approved graduate schools include the University of California, Leland Stanford Junior University, the University of Southern California (for graduate work done after 1911–12), and such other universities or colleges, belonging to the Association of American Universities, or Association of State Universities, as have been approved by the State Board of Education because offering graduate academic and professional preparation equivalent in quality to that offered by the University of California. The institutions so approved are as follows:

Indiana University, Bloomington, Ind.
University of Michigan, Ann Arbor, Mich.
University of Pennsylvania, Philadelphia, Pa.
University of Wisconsin, Madison, Wis.
Princeton University, Princeton, N. J.
University of Virginia, Charlottesville, Va.
Yale University, New Haven, Conn.
University of Illinois, Urbana, Ill.
University of Missouri, Columbia, Mo.
University of Minnesota, Minneapolis, Minn.
Iowa State University, Iowa City, Ia.
University of Kansas, Lawrence, Kan.
Catholic University of America, Washington, D. C.
University of Chicago, Chicago, Ill.
Clark University, Worcester, Mass.
Columbia University, New York City.
Cornell University, Ithaca, N. Y.
Harvard University, Cambridge, Mass.
Johns Hopkins University, Baltimore, Md.
University of Nebraska, Lincoln, Neb.

The following institutions are accredited with the proviso that this accreditation shall not extend to postgraduate work done prior to the academic year 1911–12:

Ohio State University, Columbus, Ohio.
University of Washington, Seattle, Wash.
University of Colorado, Boulder, Colo.
University of Texas, Austin, Tex.

NORMAL SCHOOLS.

Article XVI, section 1775, of the Political Code, states that county boards of education may, without examination, grant certificates to holders of California state normal school diplomas, San Francisco city normal school diplomas heretofore granted, and other normal school diplomas; provided, that the State Board of Education of this state shall have recommended the normal school issuing said diploma as being of equal rank with the state normal schools of California.

The Committee on Accreditation, feeling that the time had arrived for placing certain limitations upon the accreditation of institutions outside the state, recommended that hereafter it shall be the policy of this board to make annual revision at the March meeting of the list of accredited normal schools, the effect of which annual revision shall be to advance the date of accreditation so that diplomas showing graduation earlier than ten years prior to the beginning of the current school year shall not be recognized as bases for certification.

This recommendation was made by the committee and accepted by the board in March, 1916, and the present list of accredited normal schools is printed in accordance with it.

In September, 1916, after the adoption by the board of rules and regulations for the government of the California state normal schools, the Committee on Accreditation recommended that the Commissioner of Elementary Schools be requested to send a copy of the State Board requirements regarding California state normal schools to each normal school on the present accredited list of normal schools; that she notify the president of each school that if continued accreditation for the school is desired, it must meet the requirements of California state normal schools not later than July 1, 1918; that evidence in the form of courses of study maintained, lists of textbooks used and all other necessary information showing that the school is meeting the requirements called for, be submitted to the State Board of Education not later than January 1, 1918. If such action is not taken by the president it will be understood that there is no desire to have the school reaccredited, and it will not be listed among accredited California institutions; that in the case of institutions applying to be accredited, the Commissioner of Elementary Schools be instructed to send to the president or the principal of the school a copy of the state board requirements regarding accreditation of state normal schools and kindergarten training schools, requesting that sufficient evidence be forwarded showing that these requirements are being met by the institution desiring to be accredited, before the application will be considered.

Authorized by the board to do so, the commissioner forwarded a copy of the rules and regulations governing California state normal schools to the presidents of accredited normal schools and duly instructed them concerning conditions which would make possible the reaccreditation of their institutions; and institutions applying to be accredited have been informed of the new requirements which must be met.

LIST OF ACCREDITED NORMAL SCHOOLS.

Arizona:
- Flagstaff (1906).
- Tempe (1906).

Canada:
- Fredericton, N. B. (1906 to 1907).
- London, Ont. (1906 to 1907).
- Ontario Normal College, Hamilton (1906 to 1907).
- Ottawa, Ont. (1906 to 1907).
- School for Teachers, Macdonald College, formerly McGill Normal, Quebec (1906 to 1907).
- Toronto, Ont. (1906 to 1907).
- Truro, Nova Scotia (1906 to 1907).
- Winnipeg, Manitoba (1907 only).

Colorado:
- State Teachers' College, Greeley (1906).

Connecticut:
- Danbury (1909).
- New Britain (1906).
- New Haven (1906).
- Willimantic (1906).

District of Columbia:
- The James Ormond Wilson Normal School, formerly Washington City Normal No. 1 (1906).

England:
- Normal Dept., Edge Hill Training College, Liverpool (1906).

Idaho:
- Albion (1911).
- Lewiston (1911).

Illinois:
- Chicago Normal (1906).
- Eastern State Normal, Charleston (1906).
- Northern State Normal, DeKalb (1906).
- Southern State Normal, Carbondale (1906).
- State Normal University, Normal (1906).
- University of Chicago, Normal Dept. (1906).
- Western State Normal, Macomb (1906).

Indiana:
- Normal Training School, Indianapolis (1913).
- Terre Haute (1906).

Iowa:
- College of Education, Drake University, Des Moines (1906).
- State Teachers' College, formerly State Normal, Cedar Falls (1906).

Kansas:
- Emporia (1906).
- Fort Hays Normal, Fort Hays (1911).

Kentucky:
- Western State Normal, Bowling Green (1914).

Louisiana:
- Natchitoches (1906).

Maine:
- Aroostook State Normal, Presque Isle (1906).
- Castine (1906).
- Farmington (1906).
- Gorham (1906).

Maryland:
- Baltimore (1906).
- Baltimore Training School for Teachers (1907).
- Normal Dept. Washington College, Chestertown (1909 to 1912).

Massachusetts:
- Boston (1906).
- Bridgewater (1906).
- Framingham (1906).
- Fitchburg (1906).
- Hyannis (1906).
- Lowell (1906).
- North Adams (1906).
- Salem (1906).
- Westfield (1906).
- Worcester (1906).

Michigan:
- Central State Normal, Mt. Pleasant (1906).
- Northern State Normal, Marquette (1906).
- Wales C. Martindale Normal Training School for Teachers, formerly Washington Normal, Detroit (1910).
- Western State Normal, Kalamazoo (1906).
- Ypsilanti (1906).

Minnesota:
- Duluth (1906).
- Mankato (1906).
- Moorhead (1906).
- St. Cloud (1906).
- St. Paul Normal, St. Paul (1908).
- Winona (1906).

Missouri:
- Cape Girardeau (1906).
- Kirksville (1906).
- Maryville (1907).
- Springfield (1907).
- School of Education, University of Missouri, formerly Teachers' College, Columbia (1908).
- Warrensburg (1906).

Montana:
- Dillon (1906).

Nebraska:
- Dept. of Education, University of Nebraska, Lincoln (1906).
- Kearney (1906).
- Peru (1906).
- Teachers' College, Nebraska Wesleyan University, University Place (1909).
- Wayne (1911).

New Hampshire:
- Keene (1913).
- Plymouth (1906).

Nevada:
- Normal Dept., State University, Reno (1906).

New Jersey:
- Montclair (1909).
- Trenton (1906).

New Mexico:
- Normal Dept., University of New Mexico, Albuquerque (1908).
- Normal University, Las Vegas (1906).
- Silver City (1908).

New York:
- Albany (1906).
- Brockport (1906).
- Buffalo (1906).
- Cortland (1906).
- Fredonia (1906).
- Geneseo (1906).
- New Paltz (1906).
- Hunter College of the City of New York, formerly New York City Normal (1906).
- Oneonta (1906).
- Oswego (1906).
- Plattsburg (1906).
- Potsdam (1906).
- Teachers' College, Syracuse University (1909).
- Teachers' College, Columbia University (1906).

North Carolina:
- State Normal and Industrial College, Greensboro (1906).
- North Dakota:
- Teachers' College, University of North Dakota, University (1909).

Ohio:
- Baldwin-Wallace University, Normal Dept., Berea (1907).
- City Normal, Columbus (1909).
- City Normal, Cleveland (1909).
- City Normal, Dayton (1907).
- City Normal, Toledo (1909).
- State Normal College of Ohio University, Athens (1906).

Oklahoma:
- Central, Edmond (1906).
- East Central, Ada (1909).
- Northeastern, Tahlequah (1909).
- Northwestern, Alva (1908).
- Southeastern, Durant (1909).
- Southwestern, Weatherford (1909).

Oregon:
- Monmouth (1912).

Pennsylvania:
- Bloomsburg (1906).
- California (1906).
- Clarion (1906).
- East Stroudsburg (1906).
- Edinboro (1906).
- Indiana (1906).
- Kutztown (1906).
- Lock Haven (1906).
- Mansfield (1906).
- Millersville (1906).
- Philadelphia Normal for Girls (1906).
- Shippensburg (1906).
- Slippery Rock (1906).
- West Chester (1906).

Rhode Island:
- Providence (1906).

South Carolina:
- Winthrop Normal and Industrial College, Rock Hill (1906).

South Dakota:
- Northern Normal and Industrial School, Aberdeen (1912).
- Spearfish (1914).

Tennessee:
- Peabody College for Teachers, Nashville (1906).

Utah:
- School of Education, University of Utah, Salt Lake City (1906).

Washington:
- Bellingham (Whatcom) (1906).
- Cheney (1906).
- Ellensburg (1906).

Wisconsin:
- LaCrosse (1909).
- Milwaukee (1906).
- Oshkosh (1906).
- Platteville (1906).
- River Falls (1906).
- Stevens Point (1906).
- Superior (1906).
- Whitewater (1906).

Wyoming:
- Normal Dept., University of Wyoming, Laramie (1909).

NOTE.—Accreditation of any normal school by the State Board of Education carries with it accreditation of the kindergarten department connected therewith.

KINDERGARTEN TRAINING SCHOOLS.

In making rules and regulations for the government of the normal schools of the state, as required by law, under section 1519 of the Political Code, the kindergarten courses in the normal schools were standardized by the State Board of Education.

In order that kindergarten training schools in California and elsewhere already accredited might be given opportunity to meet these requirements the committee on accreditation recommended that the Commissioner of Elementary Schools be requested to send a copy of the state board requirements regarding kindergarten courses in California state normal schools to each kindergarten training school on the present accredited list of kindergarten training schools, and that she notify the principal of each kindergarten training school that if continued accreditation for the school is desired, it must meet the requirements of California state normal schools not later than July 1, 1918; that evidence in the form of courses of study maintained, lists of textbooks used, and all other necessary information showing that the school is meeting the requirements called for, be submitted to the State Board of Education not later than January 1, 1918. If such action is not taken by the principal it will be understood that there is no desire to have the school reaccredited, and it will not be listed among accredited California institutions; that in the case of institutions applying to be accredited, the Commissioner of Elementary Schools be instructed to send to the principal of the school a copy of the state board requirements regarding accreditation of state normal schools and kindergarten training schools, requesting that sufficient evidence be forwarded showing that these requirements are being met by the institution desiring to be accredited before the application will be considered.

This recommendation having been approved by the board was acted upon by the Commissioner of Elementary Schools.

In March, 1916, the Committee on Accreditation submitted to the board this resolution:

> *Resolved,* That hereafter, it shall be the policy of this board to make annual revision at the March meeting of the list of accredited kindergarten training schools, the effect of which annual revision shall be to advance the date of accreditation so that diplomas showing graduation earlier than ten years prior to the beginning of the current school year shall not be recognized as bases for certification.

The board approved the recommendation and passed the resolution. This resolution limits the number of kindergarten teachers of accredited kindergarten training schools, who may be certificated upon their diplomas.

LIST OF ACCREDITED KINDERGARTEN TRAINING SCHOOLS.

California:
- Berkeley Kindergarten Training School, Berkeley (1909).
- Broadoaks Kindergarten Training School, Pasadena.
- California Kindergarten Free Normal Training School, San Francisco (1889).
- Golden Gate Kindergarten Association, San Francisco (1903). (Now a department of the San Francisco State Normal School.)
- Miss Barnard's Kindergarten Training School, Berkeley (formerly Oakland) (1903).

Canada:
- Toronto Normal Kindergarten Training School, Toronto (1906).

Colorado:
- Greeley State Normal, Kindergarten Training Department (1906).

Connecticut:
- New Britain State Normal, Kindergarten Training Department (1906).

England:
- Blackheath Froebelian School and Training College for Teachers, London, (1906).
- Edge Hill Training College, Kindergarten Department, Liverpool (1906).

Illinois:
- Kindergarten Collegiate Institute (formerly Free Kindergarten Association), Chicago.
- Chicago Froebel Association (1906). (Merged with Chicago Kindergarten Institute.)
- National Kindergarten College (formerly Chicago Kindergarten College) (1906).
- Chicago Kindergarten Institute (1906).
- Froebelian School, Longwood, Chicago (1906).
- University of Chicago, Kindergarten Training Department, College of Education (1906).
- Pestalozzi-Froebel Kindergarten Training School, Chicago (1907).

Indiana:
- South Bend Training School, South Bend (1906).
- Teachers' College for Training Kindergartners and Primary Teachers, Indianapolis (formerly Indiana Kindergarten and Primary Normal Training School) (1906).

Iowa:
- Drake University Kindergarten Training School, Des Moines (1906).
- State Teachers' College, Kindergarten Training Department, Cedar Falls (1906).

Kansas:
- State Normal, Kindergarten Department, Emporia (1906).

Kentucky:
- Free Kindergarten Association's Training School, Louisville (1906). (Now a department of Louisville Normal School.)

Massachusetts:
- Boston Normal School, Kindergarten Department (1906).
- Bridgewater State Normal, Kindergarten Department (1906).
- Garland Kindergarten Training School, Boston (1907).
- Kindergarten Training School, 82 St. Stephen street, Boston (1908).
- Miss Harriet Niel's (formerly Miss Fisher's) Training School for Kindergartners, Boston (1909).
- Miss Page's Normal Kindergarten School, Danvers (1907).
- Miss Wheelock's Kindergarten Training School, Boston (1906).
- Perry Kindergarten Normal School, Boston (1907).
- Westfield State Normal, Kindergarten Department (1906).

Michigan:
- Alma College, Kindergarten Department, Alma (1906).
- Central State Normal, Kindergarten Department, Mt. Pleasant (1906).
- Grand Rapids Kindergarten Association Training School (1906).
- Kalamazoo State Normal, Kindergarten Department (1906).
- Ypsilanti State Normal College, Kindergarten Training Department (1906).

Minnesota:
- Duluth Normal, Kindergarten Training Department (1906).
- Mankato Normal, Kindergarten Department (1906).
- Minneapolis Kindergarten Association Normal School (1906).
- St. Paul Teachers' Training School, Kindergarten Department (1906).
- Winona State Normal School, Kindergarten Training Department (1906).

Missouri:
- Froebel Kindergarten Training School, Kansas City (1909).
- St. Louis Public School System, Kindergarten Training Department (1909).
- Warrensburg State Normal, Kindergarten Training Department (1906).

Nebraska:
- Omaha Public Schools, Kindergarten Training Department (1906).
- Peru Public Schools, Kindergarten Training Department (1906).

New York:
- Adelphi College, Kindergarten Department, Brooklyn (1906).
- Buffalo State Normal, Kindergarten Training Department (1906).
- Buffalo Kindergarten Association, Training Department (1906).
- Cortland State Normal, Kindergarten Department (1906).
- Ethical Culture School, Kindergarten Normal Department, New York City (1906).
- Fredonia State Normal, Kindergarten Training Department (1906).
- Geneseo State Normal, Kindergarten Department (1906).
- New York Froebel Normal, New York City (1910).
- Oswego State Normal, Kindergarten Department (1906).
- Pratt Institute, Kindergarten Training Department, Brooklyn (1906).
- Teachers' College, Columbia University, Kindergarten Department, New York City (1906).
- Utica Kindergarten Training School (1906).

Ohio:
- Cincinnati Kindergarten Association (1906).
- Cleveland Kindergarten Training School (1906).
- Columbus Kindergarten Training School (1906).
- Dayton Normal School, Kindergarten Department (1907).
- Law-Froebel Kindergarten Training School, Toledo (1908).
- Oberlin Kindergarten Training Association (1906).

Oregon:
- St. Helen's Hall, Portland (1907).

Pennsylvania:
- Miss Hart's Training School for Kindergartners, Philadelphia (1909).
- Philadelphia Training School for Kindergartners, Senior Course (1906).
- Pittsburg Training School for Teachers, Kindergarten Training Department, formerly Pittsburg and Allegheny Free Kindergarten Association (1906).
- Temple University, Kindergarten Department, Philadelphia (1906).

Rhode Island:
- Providence State Normal, Kindergarten Training Department (1909).
- The Froebel School, Providence (1906).

Texas:
- Fort Worth Kindergarten Training School (1906).

Utah:
- University of Utah, Kindergarten Training Department, Salt Lake City (1909).

Washington:
  Seattle Training School for Kindergartners (1908).

Wisconsin:
  Milwaukee State Normal, Kindergarten Department (1906).
  Superior State Normal, Kindergarten Department (1906).
  Stout Training School for Kindergarten Teachers, Menominee (1906).
  Wylie Training School, Madison (1906).

NOTE.—Accreditation of any normal school by the State Board of Education carries with it accreditation of the kindergarten department connected therewith.

INSTITUTIONS AUTHORIZED TO CERTIFY TO THE FITNESS OF INDIVIDUALS TO RECEIVE SPECIAL CERTIFICATES.

The Committee on Accreditation, working through the Commissioner of Vocational Education, had printed and distributed to the various schools giving courses in special subjects for the training of teachers, blank forms of application for accreditation in such subjects. A number of schools responded, requesting that they be accredited to recommend persons for certificates in certain of the special subjects outlined in Bulletin No. 10. After careful investigation the following institutions were authorized to certify to the fitness of persons who had met all of the requirements set forth in Bulletin No. 10 to receive special certificates. Only one of these institutions, Teachers College and Columbia University, was accredited to recommend candidates in all of these subjects. Outside of the state of California only universities, colleges and technical schools were accredited. Most of the schools listed below were accredited in only a few of the subjects listed in Bulletin No. 10:

LIST OF ACCREDITED INSTITUTIONS.

The following institutions are authorized to certify to the fitness of individuals to receive special certificates under such regulations and limitations as the State Board of Education has prescribed:

State Normal School, Chico, Cal.
State Normal School, Fresno, Cal.
State Normal School, Los Angeles, Cal.
State Normal School, San Jose, Cal.
State Normal School of Manual Arts and Home Economics, Santa Barbara, Cal.
University of California, Berkeley, Cal.
Leland Stanford Junior University, Stanford University, Cal.
College of the Pacific, San Jose, Cal.
California School of Arts and Crafts, Berkeley, Cal.
Mills College, Oakland, Cal.
California School of Mechanical Arts and the Lux School of Industrial Training, San Francisco, Cal.
Throop College of Tecnnology, Pasadena, Cal.
Teachers College and Columbia University, New York, N. Y.
University of Wisconsin, Madison, Wis.
State Teachers College, Greeley, Colo.
Ohio University, Athens, Ohio.
University of North Dakota, University, N. D.

University of Washington, Seattle, Wash.
Iowa State College of Agriculture and Mechanic Arts, Ames, Iowa.
University of Oklahoma, Norman, Okla.
Simmons College, Boston, Mass.
Bradley Polytechnic Institute, Peoria, Ill.
Oregon Agricultural College, Corvallis, Ore.
Pratt Institute, Brooklyn, N. Y.
Stout Institute, Menominee, Wis.

Institutions recommending persons for certificates in special subjects must make such recommendation upon blank forms provided by this board. These recommendations must be countersigned by the executive secretary of the California State Board of Education, and each credential must bear on its back a record of the schooling and practical and teaching experience of the candidate. This record enables the official force to judge as to the value given by the institution to practical and teaching experience where they have been substituted in lieu of a certain amount of the collegiate requirement.

(Signed) M. B. HARRIS, *Chairman.*
MRS. O. SHEPARD BARNUM.
MARSHALL DEMOTTE.

REPORT OF THE COMMITTEE ON PUBLICITY.

To the Honorable State Board of Education:

The Publicity Committee was created for the purpose of disseminating to the people of California, through the public press, information concerning activities of the State Board of Education. The progress of education depends upon public sympathy and support, which can only be secured by knowledge of existing conditions and proposals for future improvement. While the larger matters before the board almost invariably reach the metropolitan papers, practically nothing appears in hundreds of country newspapers of California unless it is sent to them in homeopathic ready-to-print doses. The committee is sending occasional articles to a list of approximately 500 California papers of general circulation. During 15 months committee activity up to the end of the fiscal year, 6,250 slips of press matter have been sent out, containing 58 articles relative to the activities of the board and its commissioners.

CHAS. A. WHITMORE, Chairman,
E. P. CLARKE,
GEORGE W. STONE.
Committee on Publicity.

REPORT OF THE LEGISLATIVE COMMITTEE.

Our biennial report of 1914, submitted prior to the legislative session of 1915, presented the legislation tentatively determined upon by this board, and stated its general policy of conservatism—of evolution and not revolution.

At the opening of the legislature, January 4, 1915, definite bills were prepared, covering the legislation desired, and were introduced as follows:

Senate Bill 236, establishing vocational schools.
Senate Bill 237, establishing classes for training vocational teachers.
Senate Bill 439, recognizing intermediate schools.
Senate Bill 444, providing uniform courses of study for normal schools.
Senate Bill 452, providing rural supervision.
Senate Bill 757, providing for special certification.
Senate Bill 819, establishing a county high school fund.
Senate Bill 820, securing principals' reports on high school texts.
Assembly Bill 444, securing high school principals' convention.
Assembly Bill 560, providing a library fund in cities.

All these measures carried in the legislature, the vocational education and the rural supervision bills meeting some serious opposition and submitting to much amendment. All received the Governor's signature except these two, the vocational education bill because its provisions were thought too sweeping, and the rural supervision bill because the Attorney General doubted the constitutionality of certain discrimination in the matter of the counties affected. While, however, the specific bill was lost, the establishment of vocational education itself was greatly strengthened by amendments to section 1750, providing for the various courses of study permissible in the high school; section 1760, providing state aid for high schools, and section 1519, providing for the training of teachers in vocational subjects. The matter of rural supervision is again being worked out by the Commissioner of Elementary Schools and contemplates a supervision maintained by the various normal schools, in cooperation with the County Superintendent, and in response to the invitation of the district.

Besides its definite legislative program, this board was frequently asked for its endorsement of other contemplated education legislation. In these instances the measures were carefully considered, and the commissioners were instructed to lend such assistance as they might to all bills not actually disapproved by the state board.

Among the more important measures passed by the legislature, but not initiated by this board, were Senate Bill 689, appropriating $15 per annum per pupil for the support of the elementary schools, thus replacing 70 per cent of the amount lost to the schools through the repeal of the poll tax; Senate Bill 447, empowering the State Board of Education to standardize courses of study for the normal schools and the qualifications for admission thereto and of graduation therefrom, thus making possible a closer relation between the elementary school and its chief source of teacher supply; and Senate Bill 439, legalizing the intermediate school.

We should be glad to be able to state the exact proportion of education bills enacted into laws by the legislature of 1915. The progress of legislation, however, is so marked by amendment, frequently even by absorption of the specific features into entirely different bills, that the only statement possible is that about 23 per cent of the education bills introduced were passed by the legislature, received the Governor's signature and have emerged as laws.

Of the legislature of 1915, it may be said that whatever personal or sectional interests may have dominated upon other matters, the general attitude toward education legislation was one of conscientious deliberation and due regard for tried standards of education and general progress. The sentiment at all times seemed to be that of desiring the fullest information in order that only the most beneficial legislation might be enacted.

Concerning the legislation now under consideration by this board for enactment by the legislature of 1917, the same policy of conservatism previously observed will be favored.

CODIFICATION OF THE SCHOOL LAW.

A most important piece of legislation contemplated is the codification of the school law. This matter has been under consideration by this board since 1913. It was brought to the attention of the legislature of 1915 and provision for preparing the work under the direction of the State Board of Education was made in the budget of the Legislative Counsel Bureau. The codification proposed does not contemplate revision or amendment except as regards clerical errors, rearrangement and resectionizing. It aims to rearrange and resectionize the laws to effect a better coordination of subject matter, and to subdivide statutes whose extreme length make necessary amendment difficult. Also, it aims to sectionize special acts which should properly be incorporated in the school law. This work has been urged by the school people of the state for many years, and their hearty cooperation is with us in this effort.

CERTIFICATION OF TEACHERS.

We recommend legislation which will permit the state normal schools to train and certificate teachers for the ninth grade.

We recommend that the law governing special certification be amended to include teachers of the deaf and of subnormal children.

We favor legislation making an elementary certificate granted upon examination valid only in the county granting it. The various standards now possible in the several counties make this provision advisable.

RURAL SCHOOLS.

We heartily endorse the modern movement for the unionizing of small school districts, but we find that certain districts of the state are not able to combine in union districts because of the limitation of 15 cents per pupil as cost of transportation. We, therefore, recommend that this limitation be removed and the amount used for this purpose be left to the discretion of the district.

Because of the small attendance of some rural schools, we recommend such legislation as will prevent the lapsing of the district but will permit any number of children less than eight to temporarily attend the nearest convenient school, and that the appropriation of the school money be transferred to the school attended.

TEXTBOOKS IN STATUTORY SUBJECTS.

Realizing the difficulty experienced by teachers in adequately presenting subjects to children without the aid of suitable texts, and the inability of the districts legally to furnish such texts, we favor amending the law prescribing statutory studies for the elementary school to permit the state to furnish necessary books in all required elementary subjects.

FUNDS COLLECTED THROUGH STUDENT ACTIVITIES.

We favor provision for suitably auditing the accounts, frequently amounting to thousands of dollars, now exclusively in the hands of high school students.

THE JUNIOR COLLEGE.

Believing that the junior college, as now established in several parts of the state, is serving a useful purpose, we favor legislation which will provide for its financial support.

CONTINUATION AND EVENING CLASSES.

We favor such amendment to the laws affecting vocational education as will permit elementary and secondary schools to establish continuation classes outside regular school hours and to count attendance therein and receive adequate state aid therefor; we favor legislation providing for special evening classes in the normal schools of the state for the professional training of manual and vocational teachers.

RETIREMENT SALARIES.

We favor such amendment to the retirement salary law as will ensure the permanency of its general provisions.

Respectfully submitted.

Agnes Ray, Chairman.
E. P. Clarke.
Marshall DeMotte.
Chas. A. Whitmore.
M. B. Harris.

REPORT OF THE RETIREMENT SALARY FUND COMMITTEE.

The committee on retirement salary fund presents the following report:

Nothing of special interest has happened in the administration of this fund since the last report.

The records show that 275 names have been added to this list of annuitants—men, 66; women, 209.

The following statement shows the financial changes that have taken place:

Balance on hand from last report	$100,218 63	
Receipts during two years ending June 30, 1916:		
From teachers' monthly payments	432,497 93	
From 5 per cent of state inheritance tax	296,415 00	
From all other sources	24,503 25	
		$853,634 81
Disbursements during the last two years:		
For retirement salaries, full amount $500	$182,870 63	
For retirement salaries, for disability, less than $500	43,424 01	
For clerical and other expenses	10,004 92	
Investments	261,949 33	
		498,248 89
Balance on hand		$355,385 92

It will be remembered that there are no salaries paid for the administration of this fund except that paid for clerical assistance, only the necessary office expenses incurred in the administration of the fund.

There is some apprehension felt by the board that the enactment of the federal tax on inheritances may interfere with this important item of our receipts. Should the receipts from that or any other source be reduced, it may make it necessary to devise other sources of revenue or to amend the present law by setting forward the age when the annuitants shall begin, or increasing the monthly dues after a number of payments at the present rate, or some other device that will make it unnecessary to resort to a legislative appropriation. Whenever this emergency shall arise notice will be given to those whose interests are involved.

Respectfully submitted.

GEORGE W. STONE, Chairman.
AGNES RAY.
MARSHALL DEMOTTE.

REPORT ON RETIREMENT SALARY LAW

By the Finance Committee of the Public School Teachers' Retirement Salary Fund Board.

To the Honorable State Board of Education:

One of the most important phases of the administration of the public school teachers' retirement salary fund law is its finances. The law is now entering upon the fourth fiscal year of its operation and its funds at the present time are in a healthy condition. The funds are carried in three accounts: the teachers' permanent fund, which is the original repository of all monies received; the teachers' retirement salary fund, to which monies for the payment of salaries are transferred from the permanent fund as needed; and investments, consisting of bonds bought for the permanent fund out of surplus not needed in the immediate administration of the law. It also contains the funds for permanent endowment, transferred upon the passage of the retirement salary fund law from the teachers' annuity funds of the city and county of San Francisco and of the county of Alameda. These amounts are $45,739.28 and $13,000, respectively, and to them must be added each fiscal year $10,000, as provided by law, making an aggregate endowment at this time of $88,739.28.

The following is a statement of cash receipts and expenditures of the permanent fund since its creation to the end of the last fiscal period, June 30, 1916:

PUBLIC SCHOOL TEACHERS' PERMANENT FUND.

Statement of Cash Receipts and Disbursements from August 19, 1913, to June 30, 1916.

	Total	Sixty-fifth fiscal year	Sixty-sixth fiscal year	Sixty-seventh fiscal year
Receipts.				
Teachers' contributions under old law used to pay pensions	$142,323 65	$142,323 65		
Annuities, San Francisco County	45,739 28		$45,739 28	
Annuities, Alameda County	13,000 00	13,000 00		
Total teachers' contributions under old law	$201,062 93	$155,323 65	$45,739 28	
Teachers' contributions under new law	415,454 60	28,695 95	212,960 00	$173,798 65
Grand total of teachers' contributions	$616,517 53	$184,019 60	$258,699 28	$173,798 65
General fund (5 per cent of inheritance tax)	465,533 39	*169,118 39	139,154 47	157,260 53
Matured bonds	7,000 00			7,000 00
Interest and discount on investments	20,128 25	2,625 00	8,812 50	8,690 75
Total receipts	$1,109,179 17	$355,762 99	$406,666 25	$346,749 93
Less transfers and disbursements below	762,566 95	255,612 70	167,940 85	339,013 40
Balances	$346,612 22	$100,150 29	$238,725 40	$7,736 53
Disbursements.				
Transfer to retirement salary fund, being pensions paid under old law	$142,323 65	$142,323 65		
Transfer to retirement salary under new law	271,044 69	36,044 69	$95,000 00	$140,000 00
Total transfer to retirement salary fund	$413,368 34	$178,368 34	$95,000 00	$140,000 00
Purchase of bonds	292,949 33	75,000 00	25,000 00	192,949 33
Annuity, San Francisco bonds	44,000 00		44,000 00	
General expenses, salaries, etc.	12,249 28	2,244 36	3,940 85	6,064 07
Total disbursements	$762,566 95	$255,612 70	$167,940 85	$339,013 40

*Item contains inheritance tax for sixty-fourth fiscal year, $79,343.75, and for sixty-fifth fiscal year, $89,774.64.

The following is a statement of transactions in bonds up to June 30, 1916:

Transactions in Bonds Purchased by the State Board of Education and Held by the State Treasurer for the Benefit of the School Teachers' Permanent Fund, and Collections of Interest Thereon for the Sixty-seventh Fiscal Year.

Title and classification of bonds	No. of bonds	Par value of each	On hand July 1, 1915		Purchased		Redeemed		Balance on hand June 30, 1916		Interest collected		
			No. of bonds	Total value	No. of bonds	Total value	No. of bonds	Total value	No. of bonds	Total value	Gross	Expense	Paid into school teachers' permanent fund
Corona City, Municipal Improvement	5	$1,000 00			4	$4,000 00			4	$4,000 00	$110 00		$110 00
Coronado, Municipal Improvement	5	1,000 00			30	30,000 00	2	2,000 00	28	28,000 00	750 00		750 00
Farmdale School District	5	1,000 00			10	10,000 00			10	10,000 00			
Fontana Heights School District	5	1,000 00			18	18,000 00			18	18,000 00	450 00		450 00
Keen Camp School District	6	500 00			5	2,500 00			5	2,500 00	75 00		75 00
L. A. City High School District	3¾	1,000 00			10	10,000 00			10	10,000 00	187 50		187 50
Modesto Irrigation District	6	500 00	50	25,000 00					50	25,000 00	1,500 00		1,500 00
Nordhoff Union High School District	5	500 00			2	1,000 00	2	1,000 00			25 00	$0.50	24 50
Ontario City, Municipal Improvement	5	550 00			8	4,400 00	1	550 00	7	3,850 00	110 00		110 00
Richmond School District	4½	1,000 00			11	11,000 00			11	11,000 00	247 50		247 50
Roseville City, Municipal Improvement	5	1,000 00			4	4,000 00			4	4,000 00	100 00		100 00
Sacramento City, Municipal Imp.	4½	100 00			40	4,000 00			40	4,000 00	90 00		90 00
San Diego City, Fire Department	4½	500 00			58	29,000 00			58	29,000 00	652 50		652 50
San Francisco, Fire Protection	5	1,000 00	44	44,000 00					44	44,000 00	2,200 00		2,200 00
Sawtelle City, Municipal Improvement	5½	1,000 00			19	19,000 00	1	1,000 00	18	18,000 00	522 50		522 50
Sebastopol, Municipal Improvement	4½	750 00			2	1,500 00			2	1,500 00	33 75		33 75
State of California Highways	4	1,000 00	75	75,000 00					75	75,000 00	3,000 00		3,000 00
State of California Highways	4	1,000 00			35	35,000 00			35	35,000 00	700 00		700 00
Suisun City, Municipal Improvement	5	500 00			10	5,000 00			10	5,000 00	125 00		125 00
Totals			169	$144,000 00	266	$188,400 00	6	$4,550 00	429	$327,850 00	$10,853 75	$0.50	$10,853 25

The following is a statement of the total cash and bonds standing to the credit of all funds:

Cash on Hand and in Bonds as of June 30, 1916.

Balance in permanent fund	$346,612 22
Investments in bonds as of June 30, 1916	327,850 00
Balance in retirement salary fund	8,773 70
Balance	$683,235 92

The following is a statement of cash transferred to, and expended from, the retirement salary fund up to June 30, 1916:

PUBLIC SCHOOL TEACHERS' RETIREMENT SALARY FUND.

Statement of Cash Receipts and Disbursements from August 10, 1913, to June 30, 1916.

	Total	Sixty-fifth fiscal year	Sixty-sixth fiscal year	Sixty-seventh fiscal year
Receipts.				
Transfers from teachers' permanent fund under old law	$142,323 65	$142,323 65	------------	------------
Transfers from teachers' permanent fund under new law	271,044 69	36,044 69	$95,000 00	$140,000 00
Total transfers from teachers' permanent fund	$413,368 34	$178,368 34	$95,000 00	$140,000 00
Less disbursements as below	404,594 64	178,300 00	85,991 05	140,303 59
Balances	$8,773 70	$68 34	$9,008 95	$303 59
Disbursements.				
Teachers' pensions paid under old law	$142,323 65	$142,323 65	------------	------------
Teachers' pensions paid under new law	262,270 99	35,976 35	$85,991 05	$140,303 59
Total teachers' pensions	$404,594 64	$178,300 00	$85,991 05	$140,303 59

The three fiscal years which have elapsed since this board commenced the administration of this law is too short time on which to base any absolute deductions as to future prospects, but the necessary factors of safety can be determined from a general statement of conditions and a comparison of present income and demands.

SOURCES OF REVENUE AND INHERITANCE TAX.

The retirement salary law has five means of support provided by law, namely: payments by teachers of $1.00 per month for thirty years; interest from investments; 5 per cent annually of the state inheritance tax; gifts, bequests and donations; direct appropriations by the legislature. With the exception of the sums transferred for permanent endowment by the associations of San Francisco and Alameda, as noted above, the retirement salary fund has been financed alone by teachers' payments, as detailed elsewhere in this report, 5 per cent of the inheritance tax, and a small return in bond interest.

The receipts from the inheritance tax are as follows:

Inheritance Tax Receipts.

Sixty-fourth fiscal year	$79,343 75
Sixty-fifth fiscal year	89,774 64
Sixty-sixth fiscal year	139,154 47
Sixty-seventh fiscal year	157,260 53

The inheritance tax is a fluctuating amount, depending upon the number of estates liable to the tax probated during any one fiscal year. It has been an unusually prolific source of revenue during the past two fiscal years, but may suffer a decline at any time. It is as uncertain as life. The last congress placed a federal tax on inheritances, which may seriously affect state income from this source. The combination of state and federal tax may place such an onerous burden upon inheritances that public opinion will demand a reduction, in which case the state will be obliged to make the sacrifice, as it alone is responsive to the wishes of the people of California. Should this situation arise, the percentage now received by the retirement salary fund from the inheritance tax must be increased, or a regular income provided from another source. The retirement salary fund can not suffer the slightest reduction in revenues, but should, on the contrary, be considerably augmented if we desire to place the future administration of the law upon a secure financial foundation.

TEACHERS' PAYMENTS AND RETIREMENTS.

The law provides that teachers may retire upon a showing of 30 years' service, half of which, including the final ten-year period, must have been in California. Teachers may retire for disability upon a showing thereof, any time after proving fifteen years of teaching in California, with the same proviso as to service in the state for the last ten years. A teacher retiring for full period must have paid in $1.00 per month for 30 years, or $360, and will receive a salary of $500 per year for the remainder of her life. A teacher retiring on disability must have paid in $1.00 per month for the period of service, and will receive a salary which shall be the same fraction of $500 as her time of service is to 30 years.

Since the passage of the law, the board has considered 605 applications for retirement. Of these, 493 were granted—363 for the full period and 130 for disability. Salaries granted for fiscal years are as follows:

Table of Salaries Granted by Fiscal Years.

Taken over from San Francisco and Alameda associations		82
Granted sixty-fifth fiscal year		130
Granted sixty-sixth fiscal year		142
Granted sixty-seventh fiscal year		139
Total		493
Died since December 19, 1913	28	
Disability cases resumed teaching	7	
		35
Net total on roll June 30, 1916		458

The gradual increase in the quarterly disbursements in payment of retirement salaries is shown in the following table:

Quarterly Disbursements for Retirement Last Two Fiscal Years.

Sixty-sixth fiscal year—		
July 1 to September 30, 1914	$17,854 62	
October 1 to December 31, 1914	21,084 32	
January 1 to March 31, 1915	22,849 30	
April 1 to June 30, 1915	24,238 81	
		$86,027 05
Sixty-seventh fiscal year—		
July 1 to September 30, 1915	$27,114 05	
October 1 to December 31, 1915	32,621 80	
January 1 to March 31, 1916	38,923 16	
April 1 to June 30, 1916	41,987 66	
		140,646 67
Total		$226,673 72

The following shows the amount of teachers' payments under the present law:

Total Payments by Teachers.

Payments, sixty-fifth fiscal year	$28.695 95
Payments, sixty-sixth fiscal year	212.960 00
Payments, sixty-seventh fiscal year	173.798 65
Total	$415,454 60

The amount for the last two fiscal years has been augmented by bulk payment by retiring teachers who came under the law at an advanced age, having made only nominal payments towards the full $360 required before a retirement salary can be granted. There are now on the rolls of the state about 12,500 teachers who come under the operation of the law, and are required to pay in $1.00 per month, but as these payments are deducted from their salaries by county treasurers, and as most salaries are paid in fewer than twelve annual payments, the average receipts from each teacher is about $10 per year. From now on the permanent fund can not anticipate an annual revenue from teachers exceeding $140,000 per year, except as the number of teachers employed in California increases. The present annual addition to the teaching force of the state is about 1,000, and the average annual increase in revenue from this source, therefore, will not exceed $10,000.

RETIREMENT SALARY ROLL GROWING FASTER THAN REVENUES.

On the other hand we are placing on the retirement roll over 130 teachers annually. In the last fiscal year the increased expenditure on this account over the year previous was $54,619.62. To offset this annual increase we can only anticipate an increased revenue from teachers' payments of $10,000. This conclusively disproves the impression, which somehow has gained circulation among teachers, that their contributions alone are providing enough funds to support the retirement salary demands. As a matter of fact, if the present rate of retirements persists, we will, in four years, be disbursing our entire income from all sources, and it will be necessary thereafter to draw upon our surplus. It is estimated by the State Board of Control that by the seventy-sixth fiscal year we will be facing a serious deficit, unless some changes are made in the conditions under which salaries are now granted, or revenues provided.

A study of the histories of teachers now under retirement salary shows an average age at retirement of 60 (plus) years. Mortality statistics give 12 years as the life expectancy at 60 years of age. For each teacher who takes advantage of the law at present the state assumes a liability of $500 per year for 12 years, or $6,000. Towards this sum the retiring teacher during her 30 years of service contributes $360. It is frequently asserted that this discrepancy is in a large measure made good by payments of teachers who leave the service without qualifying for the retirement salary, thereby forfeiting to the state the money they have paid in under the law. An average teacher stays in the profession about three years, and therefore during her teaching period contributes about $30 to the retirement fund. It would take contributions from 118 of these short term teachers to make up the sum necessary to pay for one teacher who remains to retire on full salary. Obviously, therefore, lapsed teachers' payments will have little effect on the larger problem of retirement salary support.

LOOKING TO THE FUTURE.

In bringing these matters to public attention it is not the object of the committee to sound any unnecessary alarm, but only to make clear the fact that sooner or later steps will have to be taken looking to a more sound financial basis for the public school teachers' retirement salary fund law than exists at present. The law is in the same category with an ore pocket in a gold mine; it is rich enough on the surface, but is certain to run out in the future. It is only proper that we should begin to take some stock for the morrow.

VALUE OF THE LAW.

Recognizing the great benefit to California schools and school teachers of the operation of the public school teachers' retirement salary fund law, the necessity for an absolutely sound financial basis becomes a matter of vital consideration in the administration of the law. If this splendid progressive educational institution is to be perpetuated, it must be safeguarded while its administration rests in the hands of those committed to and heartily in sympathy with the principles upon which the law is based. It is not safe to let the future financial obligations of the law depend either in whole or in part upon the generosity of biennial direct legislative appropriations. Neither is it right or just to contemplate for the state a future financial burden out of proportion to the benefits anticipated from the operation of the law.

The public school teachers' retirement salary fund law is based upon the theory that the schools and children of the state will be benefited by the retirement of teachers who have passed the age of real efficiency, by providing for them a salary in return for their discontinuance of active teaching. But combined with this utilitarian aim is a deep sympathy for the men and women of California who have given the best period of their lives to the instruction of the young, and a desire to see their declining years made comfortable and carefree by a stipend sufficient to meet the common necessities of existence. Thus we find combined here in this law a mutual benefit which is an ideal combination of utility and personal reward. For the benefit to the schools, the state should be willing to provide generously a lasting financial stability—for the personal benefits to accrue to the aged teachers of the state, the teaching fraternity should be willing to contribute a just portion and to agree to such modifications and limitations as will be necessary to place the administration of the law upon a firm and lasting foundation, so that nothing will be liable to arise in future years to curtail or to jeopardize the rewards and benefits which teachers spending their life in the profession have a right to anticipate.

POSSIBLE SAFEGUARDS.

There are several things which can be done to make the law less burdensome in its financial administration without working any appreciable hardships:

1. *Fix the age limit of retirement, except under disability, at 55 or 60 years.*

This would materially decrease the average life expectancy after retirement, by keeping in active service up to 55 or 60 years of age those teachers who are physically and mentally able to discharge their duties without detriment to the schools. The board has many instances of the retirement on salary of well and hearty teachers of from 50 to 60 years of age who were perfectly capable of rendering many years of good service in the schools. Some have retired on $500 salary from the state and engaged in other remunerative occupations, including teaching in other states. At the same time, teachers eligible to retirement but not yet 55 or 60 years of age, who are physically or mentally unfitted to continue teaching, could retire under the disability clause, without any loss of salary. The Attorney General of the state has held that teachers who have served 30 years may retire for disability and draw the full $500 salary.

2. *Increase the years of service in California from 15 to 20 years.*

As the law is primarily for California, this provision would serve not only to reduce the number of teachers qualifying under the law as at present, but it would reduce the number of Eastern teachers who come here with 15 years' service in other states and compete for California positions with the graduates of our own educational institutions. The state normal schools are now turning out approximately 600 more California trained teachers than find places in California to practice the profession they have spent several years in mastering. There is an element of injustice in the present situation as well as an economic loss. It costs the state of California approximately $500 to graduate a teacher from one of our normal schools. It costs the teacher twice that amount to live for two years while taking her course in a normal school. In this idleness of 600 California made teachers there is a failure to utilize a product which it has cost $900,000 to produce. Furthermore, it was claimed by the original advocates of this law that the retirement salary was in the nature of a deferred payment which the state really owed the teacher, but obviously the state can owe nothing on the years of teaching in other states.

3. *Increase teachers' payments after 15 years of service from $1.00 per month to $2.00 per month.*

The equity of this suggestion should be clear. After a teacher has taught 15 years, the chances of ultimate retirement under the law and participation in its benefits are five times greater than that of a teacher who has taught only 3 years.

4. *Permit no retirement for disability under 20 or 25 years of service, 20 of which has been in California.*

The board is convinced that the disability retirement provision of the retirement law is open to abuse. At present 25 per cent of retirements are for disability. The average period of service for such cases is 25 years and the average age 60 years.

ENDOWMENT IDEAL SOLUTION.

These are suggestions which have occurred in discussing the financial aspects of the law. They were submitted to accountants of the State Board of Control, who reported that the changes would remove all danger of any immediate deficit and increase the surplus funds available for permanent investment. The law now provides for an endowment fund made up of transfers of San Francisco and Alameda annuities, amounting to $58,739.28 and $10,000 per year, to be set aside from the permanent fund. The ideal future for a law of this character is an endowment fund large enough to earn an amount, which, added to the teachers' payments, would provide annually without other revenue a fund sufficient to meet all demands upon the law. Such an ultimate end was unquestionably in the minds of the framers of this law when they provided even the modest sum of $10,000 per year for permanent endowment.

FILING OF TEACHERS' HISTORIES SHOULD BE MADE MANDATORY.

The work of your committee in arriving at an intelligent estimate of probabilities in the future administration of the law is greatly hampered by the fact that only 20 per cent of the histories of teachers who may become eligible under the retirement law are on file in this office. Continued requests fail to secure any serious effort to decrease this deficiency. Young teachers, who do not at this time expect ever to accept the benefits of the law, are careless about furnishing the department of education with this information, which, though vital for our purposes, is nothing to them at present. Your committee would like to see an amendment to the retirement law secured, making the payment of salary as teacher dependent upon furnishing this board with any vital statistical information which it may require for its records.

RECOMMENDATIONS.

The Finance Committee, therefore, recommends that the public school teachers' retirement salary fund law be amended in accordance with the suggestions contained herein, and that its percentage of the inheritance tax be kept at such a figure as will guarantee against any reduction in revenues at present enjoyed.

CHAS. A. WHITMORE, Chairman.
M. B. HARRIS.
E. P. CLARKE.

PART III.

REPORT OF THE SECRETARY.

LETTER OF TRANSMITTAL.

To the Governor of California
and the State Board of Education.

Ladies and Gentlemen: Please find herewith the reports prescribed by law for the educational affairs entrusted to my general supervision during the past biennium. I hope the various tabulations and the accompanying descriptive text may afford a clear view of the conditions in the state department of education during that period.

I remain, very respectfully,

Your obedient servant,

Edward Hyatt,
Superintendent of Public Instruction.

GENERALIZATIONS

The duties of the Superintendent of Public Instruction as prescribed by law are many and varied, and they seem at times to spread him out pretty thin.

Thus, he is secretary of the State Board of Education; the executive officer of the same board; the distributor of the state textbooks; he apportions the state school funds; he is a trustee of many state institutions; he is required to print and distribute school blanks and supplies; to keep records and statistics; and to visit the schools of the state. Without numerous assistants in the different departments, the work could not be done at all. I would bear testimony to the high character and zealous cooperation of all those assistants. Many of the activities here set down could not have been accomplished without their faithful work, and to them is due appreciation and gratitude.

As secretary, I would report that the board has held thirteen meetings during the biennium; ten at Sacramento, one at Santa Barbara, one at San Francisco, one at Los Angeles. Almost without exception these have been six-day meetings, beginning on Monday and closing on Saturday. The average cost of a meeting is about $1,300, made up as follows:

Per diem of seven members at $15 per day	$600
Traveling expenses of members	300
Salaries of commissioners and secretary	400
	$1,300

The total expenditures of the board during the past two years are shown in the tabular statement herewith; the first two items are met by fees from the applicants.

	Sixty-sixth fiscal year	Sixty-seventh fiscal year
Cost of life diplomas	$856 49	$941 60
Cost of high school credentials	209 25	163 50
Per diem, members of state board	3,345 00	3.900 00
Traveling expenses, members of board	2,125 44	2,316 35
Traveling expenses, commissioners	1.709 61	2.222 50
Salary of commissioners	12,000 00	12,000 00
Salaries, clerical assistants	2,707 42	5,694 81
From textbook appropriations for salaries	3.136 00	931 00
Postage	1,170 00	1,250 60
Express	47 12	45 12
Publicity	--------	85 67
Freight	--------	16 11
Rent of Los Angeles office	--------	64 12
Stationery, from purchasing agent	--------	151 70
Printing	1,383 71	1,579 78
Telegraph	89 07	111 73
Telephone	112 12	245 90
Office fittings	1,212 78	562 73
Miscellaneous	232 36	295 72
	$30,336 28	$32,578 94

The State Board of Education also acts in an ex officio capacity as the Retirement Salary Fund Board, to administer the great fund provided by law for the retirement of aged and infirm teachers. For this reason, clerk hire, office supplies and postage are the only expenses paid by the retirement salary fund in addition to the annuities for the retired teachers. A detailed financial statement of this fund, showing all receipts and expenditures, will be found in the report of the Retirement Salary Committee on a preceding page.

The work as executive officer requires a good deal of time spent in the office superintending the great stream of correspondence, callers, questions, rulings and complaints that continually flows through the headquarters of the state school system. This phase of activity perhaps can be illustrated by the following account of a sample day in the office:

Arrive at 9 a.m. Find office force at work roughly distributing the morning mail, which consists of 200 letters and 25 or 30 circulars, reports, papers, and other enclosures. Our mail is regularly one of the largest and most varied of all the departments. It comes twice a day. It is distributed to the three commissioners, the chief clerk, the bookkeeper, the statistician and the superintendent. Everything that is in doubt comes to my desk, and by the time I glance around in the other offices it is ready for me.

The correspondence runs somewhat like this:

Letter No. 1. Personal request to intervene with Dr. Snyder in the matter of a very deserving application for a special certificate in music. I intervene. The result is the same as if I hadn't.

Letter No. 2. Trustees ask how to get rid of a teacher who is cross or careless or crazy or lazy. Opinion given that they would probably better get along till the end of the contract, unless she is actually so insane or immoral or criminal that a court would uphold her discharge.

Letter No. 3. Teacher asks how to work Problem 24 in the Advanced Arithmetic. After trying it awhile, it is respectfully referred to the Textbook Department.

Letter No. 4. Young Mr. Squiggs, of the University, is preparing a thesis upon the weak points of our public schools and would be very much pleased if I would give him the figures bearing upon it for the past ten years, together with my own reactions upon the following fifty questions. Put aside for future consideration.

At this point a stenographer appears with 75 applications for special credentials needing signature.

Letter No. 5. Ten pages, upbraiding and reproaching me for narrow and ignorant views upon somebody's fad. Answered in a mild and pacific vein.

Letter No. 6. From a normal president enclosing 115 diplomas, imploring me to sign them instantly, hurry over to the Governor with them, and return them in time for the exercises next Friday. I start them on their way. The Governor is in San Francisco, exact location unknown.

At this point Commissioner Wood appears with two book contracts that he has prepared with painstaking care, for me to read and criticize. Put aside for a more convenient moment.

Letter No. 7. Eastern publisher, complaining that a certain enclosure that he sent in with his sealed bid for textbooks was not returned. Referred to the Commissioner of Elementary Schools.

Delegation from rural school appears at this point complaining that trustees refuse them the schoolhouse for a series of night meetings. Render opinion that the trustees are responsible for the building and that so long as they remain trustees their judgment and discretion must govern. Job Wood and Will Wood called in to participate in the heated discussion.

Letter No. 8. Old teacher whose experience is insufficient for a pension writes, bitterly upbraiding us for paying no attention to her letters or answering them bruskly. Chief clerk called in to explain, finds copies of seven answers we have sent in a year, all reasonably polite; mild and pacific answer dictated.

At this point a gentlemanly agent comes in, "introducing" a new encyclopedia, wanting to sell me a copy or failing in that to get an endorsement that he can use in the schools. He gets neither, but he is wound up and it is impossible to stop his mechanism short of ten minutes. He is followed by another very suave gentleman who wishes to insure my life, and by a collector for the Salvation Army, and by three ladies who are soliciting for a church fair, and by a representative of the ministerial union, and by three reporters anxious for a story, and by a hobo who wants ten cents. Somewhat shattered in nerve I return to—

Letter No. 9. From a poor lady down in San Felipe who says flat out that she is on duty at the convention of the Mothers' Clubs for a talk on education and she doesn't know what *to* say, but she *does* want to make a good impression. If I'd just help her she is sure she would excite applause. I fish in my bar'l and send her one of my old institute lectures.

The elementary commissioner comes in here to give a breezy sketch of her recent travels, and the statistician brings in a few pages of figures needing sympathetic attention. An eastern teacher follows who just thought he'd drop in and see how things are in this state, anyhow. Mr. Snyder brings in 96 special credentials for signature.

Letter No. 10. Is from an unfortunate teacher in a big city who can not get or hold a school. She has been in the state half a dozen years, has been employed two or three times and now is in despair. *What* shall she do? She is fitted for teaching and nothing *else.* She *must* have a school. She must have *bread.* What shall she *do?* It impresses me as a cry of extremity, from one not fitted to live in her environment. What can *I* do? Only write some feeble good wishes, some hopes for better fortune!

Letter No. 11. Asks if Friday preceding may be taken as a holiday when Christmas comes on Saturday. Answer, "No." Also asks how we are to tell which are school holidays anyhow. Answered "Follow section 10 exactly," where they are categorically set down.

Letter No. 12. Superintendent Mark Keppel asks for a copy of all recent opinions of the Attorney General on educational questions and expresses his distaste at one in particular. I hunt the opinions, arrange for copies, and send a pacific letter of transmittal.

At this point, good comfortable Superintendent Smithers comes in from San Juan County. He has saved up all his troubles for months, and now he has leisure to talk them all over at the state office, when there is plenty of time to explain things himself and get them all straightened out. We straighten them out—and *tempus fugit!* In the meantime a clerk of the Board of Control calls up for a long dispute over a furniture bill, and there are three checks to sign for temporary stenographers for the board, and Sherwood brings in half a dozen claims for freight on free textbooks needing validation. Colonel Somebody calls to insist that the schools of the state shall take advantage of the law for cadet drill, and the president of a peace society threatens me with extermination if the public schools train the boy to be a soldier.

Letter No. 13. Teacher in a distant school complains that the superintendent objects to paying her warrants for two weeks rather than a full month. Explain that the school is conducted upon a basis of *months* and the superintendent is justified in insisting upon the month as the unit. The pension deductions are made by months, the attendance is computed by months, the salary paid by months, and for a few trustees to pay otherwise leads to mistakes and confusion.

Letter No. 14. Lady from San Francisco asks whether a married woman can be admitted to a public school, to learn sewing and cooking. Answer: certainly the school board can treat married women the same as they do any one else. It seems to me the school would be doing the greatest possible good in the world to teach a married woman to cook and sew.

Here comes in the flag lady to urge that we organize at once a campaign to put a flag in every schoolhouse; and a committee from a society upon the Stanislaus to promote humane education in the schools; and some people who want to know the extent to which the antifraternity law is enforced; and a delegation to call my attention to the necessity for the metric system or simplified spelling in the schools of the state; and a number of ladies urging medical inspection for the public schools; and a representative of the Thrift Organization urging that his work be taken up; and some good citizens pleading for clean-up day, or ripe-olive day, or water-conservation day, or bird day, or mothers' day, or honest-measure day, or country-school day, or old-home day, until I wonder if any day is left for an ordinary school day.

After listening to all these with keen attention and with every mark of interest and enthusiasm I return to the letters.

Letter No. 15. Can a trustee hold office who can neither read nor write the English language? Yes, there is nothing in the law to prevent it. The only qualification is that he shall be a citizen of the district and shall get a majority of the votes. Such is the freedom of our glorious country. The same thing is true when we select a county superintendent of schools or, for that matter, a *city* superintendent of schools—no certification is prescribed and it is only necessary to get the voice of the people. Strange as it may seem, the matter is never abused. The trustee may be a very valuable one who knows nothing of letters. The superintendent always is from the school teaching class. The freedom is not abused.

Letter No. 16. Some trustees have imported a teacher from Oregon. She has nothing in the way of certification for California and school is all ready to begin—in fact, it has already begun. It is absolutely necessary that the rules be suspended for this time and *their* teacher helped through. Answered that it can not be done. Much as it pains us, all must meet the same treatment.

Perhaps this is enough to illustrate the nature of the office work. While these particular points did not come in just this sequence on any one day, all these and a thousand other similar ones *did* come and *do* come continually, and they are disposed of as best we can as they come. Only sixteen letters are suggested here, and as many other points, but any one familiar with correspondence and office work knows that twice that much in a day is more likely. Of course these answers must be hasty, often mistaken or inadequate, as all human things are.

In an office that deals in a familiar way with the public it is not possible to carry all these things in exact, cast-iron business channels, cutting people off with a word and working for efficiency only. There is a kindly human element in it, a necessity for counsel and helpfulness, that must be reckoned with. These same conditions and necessities are found in the offices of the various school superintendents throughout the state.

The executive officer is charged with the general oversight of the employees of the board. These, in addition to those before noted, are as follows, at the present writing:

Clarence S. Pixley, chief clerk	$200 per month
Florence B. Argall, stenographer	100 per month
Mabel Baldwin, stenographer	85 per month
Abbie B. Telfer, stenographer	85 per month
Marion Burgess, stenographer	80 per month
Marion H. Ketcham, clerk	80 per month
Eva E. Hays, clerk	60 per month

Another duty of the executive officer is to O. K. the great multitude of claims coming in for the expenditure of money—postage, telegraph, rent, electricity, telephones, express, freight, supplies, furniture, drayage, salaries, railroad fares, hotel bills, labor, typewriters, and a great variety of smaller details. The labor of handling all this under the complex system in vogue is becoming so great that it demands the entire time of one man. So far it has been done by the assistance of my own stenographer, but the burden of estimates, vouchers, approvals, bids, records and accounts has been so constantly growing, that he can not now do much else.

Another important activity placed upon me by the law is the distribution of state textbooks. This work is in exceedingly satisfactory condition, largely because of the enthusiastic and energetic efforts of Sherwood Dyas, the bookkeeper in charge, together with those of State Printer Telfer in keeping up the supply. School people quite generally testify that their books arrive promptly and in sufficient quantity, and that the enterprise is a very great boon to the children and the teachers of the state. Particularly are they happy over the disappearance of the old troubles and delays of getting their classes completely furnished with the textbooks at the beginning of the term. It is pleasant to record the fact that the books are costing the state much less than expected. When the law was passed, half a million dollars was estimated as necessary to inaugurate the system, $200,000 per year afterward. The actual necessities turned out to be only half those sums. There are over 400,000 children in the schools. The cost of their state texts is a little more than $100,000 *per year,* so that the average cost per child per year is about 25 cents. Thus the average cost of a child's state textbooks for a year is less than that of six cigars, less than six glasses of beer, less than six daily papers, less than six movie shows! The free distribution amounts to about half a million books per year, to somewhat less than half a million children.

The sales of books are insignificant, only $6,000 per year. They are sold at cost price to the dealers, schools and individuals, and are used to supply private schools chiefly, although a few are called for to replace books lost, damaged or destroyed by pupils of the public schools; and a few so that pupils may have an extra set of books at home.

The books are printed by the state printer, for the most part from plates leased of the publishing companies on royalties ranging from 12 to 15 per cent of the list prices. This royalty is paid quarterly and it amounts to more than one-fourth the entire cost of manufacture. During the year just passed the American Book Company received the greatest royalty, $10,000, on histories, arithmetics, writing books and readers. Macmillan & Co. came second, with $7,000, for geographies and spellers. Silver, Burdett & Co. were third, with $5,000, for language books and readers. D. C. Heath & Co. came next, with $3,000, for civics and introductory history. Newson & Co. received $850 for their primer, the World Book Co. $750 for their book on hygiene.

and Ginn & Co. were paid a small balance due on their old reader contracts.

All these facts and many others concerning the textbook situation may be more exactly obtained from the statistical tables in section 10 of this report, on a later page.

Visiting the schools of the state is a very elastic term, which may mean anything. Manifestly it is impossible to visit *all* the schools of the state. Only types, or those needing special help or those of special interest can be undertaken. The addition of three commissioners to our office force has greatly widened the scope of this activity, and has improved the service. These three, each with special interests in a different field, have been active, enthusiastic and zealous in going out among the schools of the state, with excellent results in harmonizing, inspiring, regulating the work. Their reports will show this more in detail.

I have myself gone to as many of the regular public schools as time would allow; and in addition have made it a point to visit a number of the unusual institutions that form a part of our educational resources. The following sketch of a group of these schools may perhaps be a proper part of this report. While it gives a very fragmentary, incomplete view, it may be of interest in years to come to preserve this free and easy account of these schools in the year of our Lord 1916.

PRISON SCHOOL AT SAN QUENTIN.

The forbidding gray walls of San Quentin, rising from the tidal marshes of Marin County, might not be expected to harbor anything of educational interest. Yet here I found the most original and forward looking, most encouraging reformatory education of all.

Warden Johnston is the impelling power in it all. He is a man of vision, of dreams, of executive ability, and driving power besides. Strange that the frail, slender, white faced manager of a "gents furnishing store" in a great city should have developed into the chief penologist of a great state at the call of opportunity! There is some difference between offering purple neckties to gilded youths over the counter and bossing two thousand desperate criminals of every clime and color and in being responsible for them day and night. Johnston's career illustrates the saying that in America there is always the right man ready to spring up for any emergency.

When the gloomy walls opened and let me in, the captain of the guard conducted me to one of the buildings of the great quadrangle that he called the chapel. Inside was a huge, bare room. One end was filled with the stacks of a large library of well-worn books. The floor was covered with long desks. Blackboards and charts hung from the pillars. An occasional table stood in the corner or among the desks. Six convict teachers were at work, with Mr. Purdue, a convict principal, in charge. Over him in general charge of the educational activity, is the chaplain of the prison, who was not there that day. There are, therefore, no outside, professional teachers on the work at all.

This large room has all eight grades running simultaneously. It is for the younger prisoners, those under twenty-four years of age. The largest class was the first grade. About 160 men are in this school.

In another of the big buildings was a night school, where the older men who choose may get the elementary things of education after their day's work, as the younger ones do in the day school, after a shorter day's work. Some 80 prisoners attend the night school.

Now comes the big thing, the thing that is new, the thing that Warden Johnston really regards as his significant and original undertaking. He calls it the Letter Box System. The day school teachers prepare lessons in leaflet form, in all the branches of the upper grammar and lower high school grades. These are turned out in quantity, beautifully printed, by the prison printing press. All prisoners who will are given these lessons regularly and encouraged to work them out *in their cells,* after the day's work is done. Twice a week teachers take up the papers from the letter boxes, grade them and give necessary explanation and encouragement; 850 men are enrolled in this work. Of course no one can take it unless he is at least past the fourth grade—but the day and evening schools carry them up to that point. In fact these may be considered as feeders for the big Letter Box School.

For those who are farther along there is an organization of the university correspondence school. The librarian gets the desired lessons from Berkeley, issues them to the men who call for them, takes up the answers and papers as prepared by the men in their cells, delivers the gradings and suggestions with the corrected papers and keeps a card index record of the whole proceeding. I looked this over with much interest. The variety and extent of it was remarkable. A very great many of the prisoners had taken courses in the Spanish language—not the Spanish or Mexican prisoners at all, but the Americans of the higher class, who had taken it up to add to their general equipment, believing it was important to the future. I was surprised to see that a large number had taken a course in *flower culture.* Other courses were as wide as the world—salesmanship, banking, gardening, dietetics, mathematics, bookkeeping, zoology, engineering and what not. No less than 250 prisoners were taking work in this university school, sending in their papers and receiving back the corrections and the suggestions of the university professors, those who have the various subjects in charge.

Thus, more than half of the entire prison population—there were 2,433 at roll call, all told, the morning I was there—are touched more or less by this educational enterprise. It is a great boon for these men to have something to occupy their minds during the solitary hours when they are locked in their cells. It gives them hope—it prepares them better for returning to society—it prevents the ferments and plots and revenges that would otherwise occupy their thoughts. Certainly the half of the convicts who take this mental work will need less of armed guards walking their beats, and certainly fewer of them will return to prison again—20 per cent of the whole population, remember, are *repeaters.*

The experiment is so new, however, that the warden refuses to draw any deductions or prepare any statistics touching these points. ''Time for that later,'' he says.

In the meantime, many criminologists are coming from other states to study and often to adopt these plans. Oregon, Washington and Arizona are among the number. The striking points are as follows:

1. The whole prison population is given educational *opportunity.* It would be quite impossible to get such large numbers of such men into a *school,* impossible physically and financially, too. In this case, the school is carried into the solitary cell, where it is most needed, and carried there by wholesale.

2. The men must take their education in addition to their labor. They can not pretend to go to school to get out of work. No fraud about it if they take it of their own desire, after doing their penance in the jute mill or the factory for the day.

3. All classes of men—and women—there are thirty-five women on the rolls—are provided for—illiterates, elementary grades, high school and university—quite a completely organized system, one part leading naturally to another.

Thus, you have a hasty view of an educational effort that is making this very day in a California institution that is old enough to have gray hairs—in 1851 it was in existence, and had 35 prisoners. The effort is worth our intelligent attention, and it certainly deserves our encouragement so far as we are able to give it in the future.

THE PRESTON SCHOOL OF INDUSTRY.

Another of the educational resources of the state is the reform school at Ione, known as the Preston School of Industry. Here are assembled some 400 boys, all over 16 years of age, who have been committed there by the courts to stay until they are twenty-one. They are organized into twelve companies and are under military discipline. They are housed for the most part in cottages, about 30 individuals in each, with a house mother in charge. Some companies are in the basements and upper floors of the large administration buildings. One is in a cell house, living and breathing and having its being under lock and key. This company is largely composed of the runaway boys.

There is a school with five teachers, conducted by the institution, which serves about half of the boys. The other half have already gone beyond the grammar grade or else are judged not mentally able to profit by intellectual training.

This whole enterprise is more nearly conducted under the Binet-Simon mentality tests than any other I know. All the boys admitted are tested and recorded and tested again from time to time. The mental ability of each boy as thus determined is used in assigning him to his company, in placing him in his work, in deciding whether he shall go to school or not, and in steering him toward a future occupation.

The psychologist who conducts this part of the enterprise is Ralph S. Roberts, a young university man, with courage, cheer and enthusiasm. I watched him testing Elmer, a negro boy. 'Tis a long hard grind to put a subject through these mental tests. Maybe it lasts half a day, and leaves both tester and testee exhausted. For the most part it consists of a great number of questions along the different lines of mental activity—some requiring memory, some observation, some quickness, some judgment, some color sense, some form sense, some weight sense, some number sense, and so on and so on *ad infinitum*. I listened to it for an hour and a half and saw the record made, and was glad 'twas the colored brother who had to answer instead of myself. Really, it seemed to me I should be rated as a defective myself without doubt. Mr. Roberts, however, assured me I would stack up higher than that, which was a great comfort.

Here then we have a most interesting educational experiment in full swing. Four hundred young citizens whom our regular public schools have failed to reach for one reason or another, are here brought together and given the best chance for success that we know how to give, up to date. Nearly half of them are feeble-minded. One-fifth of them are of normal intelligence. The remainder are of backward intelligence or are mentally defective. Eighty per cent of them come from broken homes—homes that are broken up by death, desertion or divorce. The result of a remarriage of one of the parents is very unfavorable to the boy. Home conditions among the feeble-minded is worse than among the other mental groups. The largest number drop out of the public school before the age of 16 and before completing the sixth grade. Hardly any were in a public school at the time of commitment, but practically all had been in the public school previously. Among the normal group are those of very high intelligence, high school graduates and college students. Seven married men are there, some with children of their own. A boy's age is judicially determined at the time of commitment; thus it happens that a boy sometimes comes "aged 18" who had been previously discharged from the same institution at the age of 21. A few of the boys are of great wealth—hundreds of thousands of dollars. Practically all of them are confirmed cigarette smokers at entrance.

The great body of the boys are organized into a republic, with all of the courts, law making bodies, executive officers, etc., complete. About 10 per cent, however, are not mentally competent to take part in student self-government, and they remain under the direct control of adult officers of the state.

Three of the companies live in Honor Cottages. Here they have almost as much liberty as they would at home. They go to bed, eat, read, play about their cottages in freedom. Their living rooms have big fireplaces and equipments of sports and games and music. No penal suggestions are visible at all. Of course, they must go to school half a day and labor half a day, each day. If they can't live successfully here, they go down the social scale to a more restricted domicile.

There seems to be plenty of labor to occupy the whole community for the future. There are blacksmith, carpenter and paint shops, shoe shop, tailor shop, printing shop, bakery, laundry. In agriculture, there are orchards, poultry, dairy, live stock, gardens and farms. The soil, however, is not well adapted to agriculture, being hard, thin, white and poverty stricken, very suitable as a clay for making brick. Consequently, the chief industry is brick making, which is carried on in a successful and scientific way. Many brick buildings are erected by the boys, and they can be seen here and there on the hills and slopes. The grading of the grounds, building of streets, laying of sidewalks, planting out shrubs and trees, putting up fences, excavating, laying out athletic fields and all that constitutes an extensive and steady employment for many hands. The total cost is $275,000 for two years. The scenic effect of the whole estate is very handsome and striking, a great area of valleys and rolling, brush covered hills, with the Sierras in the background, and with the varied activities, the tall Administration Building, the many smaller structures of the Preston School of Industry in the front.

Here the courts send the young men of the state whom the homes and the schools have failed to hold and control. Here they are ministered to, as best we know, physically, mentally and morally. They are tested and studied, and are put into occupations and activities for which they seem best suited by taste and mental peculiarities.

Then they have opportunity to go up—or down; up toward the freedom and self-control of the Honor Cottages or down toward the solitary cell of the Detention Building. In the struggles of this life toward self-direction lies their opportunity and our hope.

I can not undertake to set down here the many details of that life, the records, the credits, the rewards, the officers concerned in it, the particulars of the complex system for carrying it out; but can only suggest it as a most interesting educational enterprise, well worth further study and observation from any one interested in the future welfare of the state.

THE GEORGE JUNIOR REPUBLIC.

For a long time I've been hearing about the George Junior Republic of California, located near Chino, in San Bernardino County. At last, one Saturday afternoon, I journeyed out from Los Angeles to see it.

It is an entirely worthy and an important part of our state educational system. It is not a public school, nor does it compete against the public school in any way. Rather, it supplements the public school, taking up and working with the misfits and spoiled lumber upon which the public school failed and cast aside as waste.

The institution owns 275 acres of rich level land in one of the fairest southern valleys that the sun shines on. It is underlain by artesian water, and has a nice surface stream with natural groves of willows. April poppies were in bloom when I was there, and the surrounding hills were smooth and green and wonderful to see. The land is from the heart of the Chino Rancho of 42,000 acres, an old Spanish grant that was bought by Dick Gird when he sold his gold mines long ago. Now it is cut up and populated, with the town of Chino for its metropolis.

The Republic was founded by a group of good but wealthy citizens of Pasadena, upon the idea of the republic of similar name at Freeville, New York. It departed immediately, however, from the parent institution and is like it only in name and in basal idea at the present time. Vocational guidance is its watchword.

It is seven years old. It takes care of 75 boys. Its chief officer is L. H. Waterhouse, who is called Managing Director. He has about twenty assistants, including teachers, heads of department, bookkeepers, and what not. Among these assistants are a group of high-spirited, helpful young enthusiasts from Pomona College, near by. The boys are committed to the school from the juvenile courts of the surrounding counties and are also sent by parents who can not manage their children at home. Almost without exception they are the children of broken homes, their parents the victims of death or divorce or "incompatibility."

The Republic has a large and handsome group of buildings growing up about and upon a swelling hill that rises proudly above the level surrounding land. There is a Government House, substantially built of concrete. It contains an auditorium with a moving picture outfit, a council chamber, court room and jail. There are three cottages, where the boys live, each under the care of a house mother. The largest of these are La Paloma and John Brewer cottages, costing $10,000 each, and built of shakes. There is a solid cement business block, containing the store, post office, bank and bookkeeping departments. A handsome chapel is building, and a nice three-roomed public school is maintained by the Chino district. There is a swimming pool, a tract of ''government land'' that any one may ''take up,'' a dairy, poultry yards and farm buildings.

The boys must pay $4 per week for their board, room and laundry. They must also pay for their clothes and any other necessity or luxury that they choose. They must work to earn the money upon which they live. The poorer jobs pay nine cents per hour, the best 12 cents. They receive pay for going to school as well as for the laborious jobs, and they must go to school half the day. They get extra pay for overtime. Some boys accumulate money, some spend everything as fast as it comes, some go in debt. They have an election every six months, choosing their own judge, prosecuting attorney, and councilmen. When they run away or commit any crimes they are apprehended, tried and punished, too. They are up against the real thing and there is no nonsense about it.

A great variety of work is available. There is stern competition for the desirable jobs—and the best man wins. Independent enterprises, like pigeon raising, or gardening, may be undertaken. Brickmaking, poultry, dairy, farm, cook shop, printing office, housework, laundry, afford abundant opportunities.

The head poultryman was Lawrence Porteous, a boy about 18 years old. I talked with him a long time in his yards. He was apparently an expert poulterer, and knew all about the business. He hired several assistants to feed the chickens and do the chamber work for them, while he bossed the job and kept the records. His positive and assured style of talking was a wonder to hear.

''Here are a thousand chickens that will be just right for fryers in three weeks. We dress them and send them out as far as San Diego, by parcels post. No, we don't sell them to the cookhouse till they grow up.

''Here are a thousand just three days old. We feed them plenty of sour milk. They don't get sick if we give them plenty of sour milk, and we lose hardly any of them. Why, a chicken *can't* get sick if you keep him clean and feed him right.

"Here are the brooders, where the little fellows go in to get warm. A chicken must be kept warm. If he gets chilled, he's gone. Why, I can raise anything that will hatch. See those banty chickens with the others? If I can raise banties I can raise anything. I had one mocking bird and two black birds with one brood, but the lining caught fire and they burnt to death. Duck eggs and goose eggs, they're easy. We've got some peacock eggs now to try out."

After thinking the matter over for some time I came to the conclusion that this boy had his head and his heart and his time full of something pretty practical, something he could and probably would use for a life work. The Republic has justified itself, has given its reason for being, in what it had done for Lawrence Porteous alone! But, there are 75 others! And Mr. Waterhouse told me, with tears in his voice, "And I could guarantee to fill a new cottage *every month* with fifty boys, if I could only get the money to build the cottages!"

The two Pasadena families that take the greatest interest in this enterprise are the Atwoods and the Fowlers.

Miss Atwood has built a beautiful home on the hillside and lives among the boys. Every Saturday they all come to her lovely parties in the evening to play games, sing, listen to the victrola and have a jolly time. Sunday evening they go there to Sunday-school if they feel like it, and afterward to church whether they feel like it or not. I laughed all evening at the master of ceremonies, a red-haired boy, who had a great time whooping things up and making the late arrivals take a front seat. They would all want to slump down outside, on the steps, or in a settee—but no, sir! There were seats in front and up they must go. Sometimes they would refuse, rebelliously—but a dark and significant hint at "the can" from the red-haired boy would send them up with promptitude. The "can," as I inferred, was the jail.

Miss Atwood is known as "Aunt Eleanor" and she is the tutelary genius of the place.

The Fowlers have bought a piece of land and built their home a little farther away, but where they, too, can be a part of the social life of the Republic. Their modest cottage cost $100,000, and it is an architectural gem. Near it and connected with it by pergolas, is the guest house, where a dozen visitors may be entertained. The family came originally from Detroit, and built its fortune upon the white pine lumber of Michigan. When the pine was all stripped off, the head of the house came to California and engaged in the same business here, building the flume that brings lumber from the mountains down to Sanger, in Fresno County. The city of Fowler was named for him.

I was interested in studying Mr. Waterhouse and tried to find out where he got his steam for this kind of work and where he got his ideas concerning vocational education. He looks like a sincere, honest and intelligent young farmer, and so far as I discovered, that is what he is. He is not a college man, but has read much and has thought about his reading. He is certainly conducting the most interesting and most practical example of a prevocational school there is in the state. He is working with his two young college men, Mr. Clary and Mr. Snyder, in a deliberate and conscious way, to develop the principles of vocational guidance. His laboratory is worth watching and worth visiting by those who are interested in educational progress.

THE SCHOOL AT FOLSOM PRISON.

Last week I went with Mr. Jacobs to spend a day in a new kind of a school, the Prison School at the Folsom penitentiary, commanded always by the rifles and machine guns of a dozen guards in watch towers and walls all round. Jacobs is the principal. But he only goes there once a week, on Saturdays. The rest of the time he is head of the department of mathematics in the Berkeley High Schools. Friday nights he goes to bed on the newspaper train which pulls out at three o'clock in the morning for Sacramento. He gets there just in time to catch the auto-stage for Folsom, twenty miles away. At five o'clock in the evening he reverses the route, returning to Berkeley.

There are 1,200 men in the prison, all kinds and colors and races of men, sent there for all kinds of offenses, but chiefly for crimes against property. Stealing, burglary, robbery, absconding, forgery, larceny, house breaking, embezzlement seemed to be about three-fourths of the cases. This army of men is well fed. They have splendid appetites. But they have nothing to do. Society will not allow them to produce anything to be used outside, for that competes against free labor. They do some gardening and some farming on the prison farm, but that can't keep 1,200 husky men busy! Therefore they loaf, they kill time, they lounge around, under the guns of the guards. It is a pitiful thing to see them doing nothing, growing more inefficient, learning to be listless and worthless. They will return to society less capable of maintaining themselves than when they left it. They should be employed, they should do something, they should labor even if it be only to throw a pile of bricks over the fence and then throw it back again.

With all these men Mr. Jacobs is hail fellow well met. They call him "Professor," and wherever he goes they have a cheery greeting for him.

A short while ago he had a queer adventure. While going about one night in the scholarly streets of Berkeley, he was suddenly held up by highwaymen. His captors came close, revolvers in hand, to rob the schoolmaster of his wealth. When they saw who it was holding up his hands "Why, hello, Professor," they said; and after some pleasant conversation, they wished him a kindly good night and passed on, never touching the thirty cents in his pockets. It was some of his friends from the prison who had been paroled or discharged!

Twenty-one years ago Jacobs landed in America from Russia, raw, green, scared, penniless and unable to speak a syllable of English!

A week ago he married a lady of Berkeley, cultured, scholarly and beautiful, with all kinds of university degrees, a native daughter and the daughter of a native daughter of California.

Truly is America the land of opportunity!

The prison school is held in the chapel, a great, bare hall, with a few tables and a great number of benches on the floor and a few blackboards on the wall. A little cage in the corner is filled with the books and supplies.

Mr. Jacobs is the principal and he is the only teacher from outside the prison. The others are chosen by him from the convicts. I never saw more bright-faced, enthusiastic teachers. They were eager, absorbed in their work. And, like other teachers everywhere, they had troubles of their own. Not all the convicts believed in schooling, and elements were always at hand to disparage, hinder, discourage and ridicule their work.

Classes were conducted in mathematics, Spanish, Italian, typewriting, stenography, English. About half the total number of prisoners were in the school. Of course their work was voluntary. The state furnished free textbooks, but they were in many cases unfitted for the purpose. Other books, supplies, papers, magazines, etc., were donated and gotten together with the greatest difficulty.

Mr. Jacobs has a habit this year of taking with him outside people to "talk to his boys." This time it was Dr. Richard G. Boone, of the University of California. I watched the big audience as Dr. Boone talked. It responded to him, grasped his subtlest points, took in his humor, just the same as any other body of people would do. It compared very favorably, so far as looks and spirit went, with a big teachers' institute or association. Afterward, the men crowded around the lecturer to ask about this, comment upon that, exactly as the teachers do upon similar occasions with the same speaker upon a like topic. There is so much of bad in the best of us and so much of good in the worst of us that it doesn't become any of us to be too sure of his ground in judging some of us.

THE THACHER SCHOOL.

I lately had a chance to visit one of the most remarkable schools of the state, or indeed of any state, in the Thacher School, near Nordhoff, Ventura County. It is a private school, preparing boys for college, and conducted by Sherman Thacher and his brother William. Not all of us can send our youngsters there—the tuition fee is $1,100 per year, with extras.

Does that remove it from the pale of our interest and impel me to change the subject? Not at all. Let us look it all over with thoughtful care, and try to find some points that we can adopt to strengthen our public schools. If you look at the matter rightly the state is big enough and strong enough and rich enough to afford anything for the good of its children that *anyone* can.

'Tis a beautiful place, the Thacher School, tucked away in the brush-covered hills and the orange groves and the live oak slopes of the Ojai Valley, twenty miles inland from the sea at Ventura.

You'd never suspect it was there, a school of 50 boys, gathered in from all over the United States and from foreign lands as well, each with his saddle horse and his camp outfit, all studying Latin and mathematics, dominated by traditions of Yale.

The Thachers are the sons of old Professor Thacher, for generations the cultivated and scholarly head of the Latin Department at Yale. They came out some thirty years ago and were enraptured by the dry, clear and beautiful Ojai, where they hunted and camped for sport. Some young relatives joined them later. 'Twas such a splendid place to live, to recuperate from the climate and the culture of New England.

So, the place gradually grew to be a school, a school built by the fine scholarship and the high character of the brothers. They prepare a few boys for college, in the best way they know. Their standards are quite exacting. No cigarette smoking, boozing, candy kids need apply. They don't fit the environment at all. 'Tis no reformatory for spoiled darlings, but a place for honest effort and high-minded work. The school doesn't have to prove charges or consult the trustees when the wrong boy gets in—the wealthy parent is coldly informed in a very correct letter that his son does not harmonize with his surroundings and that he will be home on the 5 o'clock train. That is all. The places that knew him now know him no more.

I took dinner at the school. Fifty hearty fellows, bronzed, athletic, active, made quite a family. There were nine teachers among them, one or more at each table. I saw no throwing of biscuits. It seems profanation to even mention it. Six inches above each table was a smaller, revolving table, containing the salt, sugar, meat, mashed potatoes, gravy, and the other things that everybody used, so that each could supply his needs after the first helping without disturbing others.

In the early morning I walked about a little, all alone, and looked things over. The rocky hillsides were studded with many buildings; cottages for the Thachers; dormitories for the teachers and the boys; a fine school building; stables for the horses; barns for the dairy. Then there was a swimming pool, many tennis courts, baseball grounds, store houses, pergolas, porches, arbors. Between and among them all was a wealth of flower and foliage on vine and tree. Feathery peppers, tall eucalypti, orange and rose were everywhere. The native oaks and chamiso were preserved wherever possible and they lent variety to the scene. In a rocky basin was the outdoor theater, with natural rocks for seats, a little flat for a stage and a gurgling stream for a constant orchestra, all with great live oak trees for roof.

Each boy is compelled to care for his own horse, feeding, watering and grooming it; and cleaning out its stable, too! If there's one thing more than another that's calculated to keep a fellow democratic, to keep him in touch with the world and close to the ground, I imagine that something is acting as valet to a horse. He can't really turn up his nose at the common herd so long as he bears that rich horsey aroma himself. Sometimes mamma writes for Willie to be excused from this menial work, but no, Willie can't be excused. It's good for him.

Out in the yard stands a wooden horse with a packsaddle where the boys can practice in tightening cinches and throwing the diamond hitch. Often a group goes off into the mountains over Sunday.

The "rough house" was an interesting building. Two stories in height without floors or glass, it was yet a handsome structure. Inside, there was a gallery all around, and there were various ropes and ladders from the thick straw on the ground to the gallery above and to the square hole in the roof above that. Here the boys could come when they felt that way, and race and chase to their hearts' content, playing tag, playing horse, climbing and jumping, rolling and turning up and down, over and across, back and forward, as long and as hard as they would or could.

Maybe that's why they did not throw biscuits at the dinner table! The rough house is the safety valve for surplus animal spirits. Maybe the public school would better take note of that.

After observing Sherman Thacher and his work for a day or two, he seemed to me one of California's great men. His sturdy American citizenship, his stern Puritan conscience, his promptness to stand up instantly for all that is good and true and sincere, his steadfast faith in the right, his hatred of sham and fraud, all go to make him a valuable and a dependable man, of use to his kind. He is not only the principal of his private school, but is the leading trustee of a public school, the Ojai High School, and has been for years. He fetches and carries, and gives up his time and uses his machine for the public school as faithfully and as self-sacrificingly as any other California trustee does. Along with the other 10,000 unpaid trustees of the state, I salute him.

CONSERVATORY OF MUSIC.

Now I have had a new school experience—so new and different that it almost seemed another continent or another world. It was attending the graduating exercises of the conservatory of music, at the Notre Dame College, a Catholic institution standing near the center of the city of San Jose.

This college wasn't built yesterday, and is not exactly new, even though I had never seen it before. In fact, it was founded long before I was born, in the year 1851. It occupies ten acres of land, in the heart of the city, with a high wall around it. Its beginning was when two Sisters of Notre Dame arrived at San Jose with a total capital of twenty-five cents, just driven away from an unsuccessful attempt of the same kind in Oregon.

Now, it possesses ten rich acres of city property, tall buildings, white arbors, great trees, ninety sisters, two hundred students and an age and dignity and experience that make the smartest and biggest of our schools look like the *nouveaux riche.*

I walked down to the college at 10 o'clock. The outside wall was grim, grey, cold, forbidding. I pressed the button. The big door was opened by a black clad sister, who sent for the superior to tell whether I should be admitted or not. Sister Veronica made me welcome, and sent me in charge of one of the teaching sisters, to a good seat in the auditorium.

Certainly, in the way of music, there is no other such ambitious and imposing institution in California. The great stage was set with a figure of the Saviour in the rear center, with rose colored lights and rich hangings all about, with eight big pianos on the sides and five tall golden harps in the front.

The vast auditorium was a blaze of color and light and life and animation. The archbishop's rich chair, in the front of the center, was the nucleus about which everything revolved. When he came swiftly in, bowing and saluting to right and left, attended by twenty-five priests, the exercises began. The students of the school were massed to right and left of the hall. The archbishop and the priests were in the front, with a large and dignified space between them and the stage. There was a very handsome and exact program, which was exactly followed, with no oral announcements or explanations whatever. Every performer, before going to the stage, knelt and kissed the archbishop's hand, and courtesied to him before resuming her seat. There were solos and duets and trios and quartets and sextettes and every other musical combination unknown to me. There was singing and harping and the music of the piano, the violin, the horn and all other instruments of string or brass or wood.

An address was made by Archbishop Hanna. He is a most pleasing speaker, a skillful, polished orator, an able man. He was in a hard place, as the head and the center of the grand occasion, every eye marking him, his every move, every intonation, every fleeting expression observed and noted by hundreds every second. He carried it off well, as the gracious, approving, appreciative, intelligent master of it all.

One of the notable features was the way in which the teachers, the real managers of it all, rigorously effaced themselves—in strong contrast to our public school customs. No teacher was even seen—none mentioned by word of mouth or printed on the program. They must have been somewhere, to make everything move off so exactly, without halt or delay—but not so anybody knew it. An occasional click was heard behind the scenes, when some chorus or orchestra would start off—but nothing visible. Some original compositions were presented, in verse or music, and where the author's name would naturally be emblazoned in glory was only the modest initials "S. N. D."—Sister of Notre Dame.

Thus these good women work away for the helping of humanity year after year, quietly, unobstrusively, unknown to the world. They not only teach the music and the painting and all the other branches of the college, but the smaller children in the parochial schools all around as well—not only that, but they scrub and cook and serve and do all the other ten thousand things that are necessary to be done in order to lead a civilized life.

I always feel like throwing a bouquet of appreciation at the feet of these self-sacrificing souls who give themselves up to the service of the next generation and get out of it neither salary nor fine clothes nor public notice nor joy of life.

These visits to exceptional schools were made with the hope of finding something of value to apply to our work in the regular public school system. No school can afford to do more for the welfare of the children than the public school. We must be on the alert in every direction for improvements that can apply to them. It will be a sorry day when the people of California get the notion in their heads that some other school can give better advantages to their children than their own public school.

The law prescribes that the superintendent shall act as a member of the board of trustees for each of the following state institutions:

The State University at Berkeley.
The State Normal School at San Jose.
The State Normal School at Los Angeles.
The State Normal School at San Francisco.
The State Normal School at Chico.

The State Normal School at San Diego.
The State Normal School at Santa Barbara.
The State Normal School at Fresno.
The State Normal School at Arcata.
The State Polytechnic School at San Luis Obispo.

It is clearly impossible for one individual to attend all the meetings of all these boards, in view of the number of meetings, the great distances apart and the many conflicting duties at the same time required by law. All that is physically possible is to go to occasional meetings, to go when necessary to make a quorum and to go when some business of great importance make attendance specially desirable.

Another activity is the apportionment of state school funds, which is accomplished by the faithful and painstaking assistance of the statistician, Job Wood, Jr. During the two years past we have apportioned $11,386,957.03 to the 58 counties of the state for elementary and $1,524,752.91 for high schools. Roughly, this is 5½ millions per year for the elementary schools and three-quarters of a million per year for high schools.

Printing and distributing blanks and forms for the use of high and elementary schools is another important activity of the state office. Approximately $10,000 per year is expended in this way, all of which goes to the state printing office. The chief items are as follows for the biennium just past: School Laws, School Registers, School Reports, Circulars and Bulletins, Diplomas, Contracts, Notices, Election Papers, Teacher's Certificates and Apportionments.

The keeping of records and statistics is another and an important activity, in which the statistician figures largely. Every teacher, principal and city superintendent in the state is required by law to keep exact records throughout the term of the attendance, expenditure, condition and other vital facts of his or her school, reporting them under oath at the end of the term to the county superintendent of schools. The county superintendent makes herculean labors during the months of June and July to summarize and get together these teachers' reports in readiness to report them in turn to the Superintendent of Public Instruction under oath. There is then necessary several months of exacting labor to collate, assimilate, digest, arrange, combine, recombine, tabulate, interpret and otherwise manipulate the great mass of statistics, upon which the state superintendent must make his report to the Governor, under oath. Ten statements of general interest here follow, derived from these statistical tabulations for the past biennium, which will be found on later pages of this report.

First: The length of the school term has decreased during the past two years. The number of schools maintaining 160 days or less has risen from 482 in 1915 to 1018 in 1916, while those maintaining 200 days or more has fallen from 252 down to 20 in the same time. The average loss for every child in the state is six days.

The cause of this reduction in the length of the school term is to be found in the reduction of school money caused by the abolishing of the poll tax in 1914. There were $22,529.93 less paid for teachers' salaries in 1916 than in 1915.

Second: There is at present an unusual growth in the evening school, or night school, as it is often called. Particularly is this true in the case of the evening high school. This is largely due to an agitation throughout the state for the education of the adult foreigner, made by the Immigration and Housing Commission, and to the fact that a school opening an evening school is able to increase its attendance upon which state and county apportionment is based to such an extent that it nearly or quite maintains itself without local expenditure.

Third: The average cost per pupil in educating high school students has fallen from $87.19 in 1915 to $76.72 in 1916. This comes through the increase in evening schools, which are relatively cheaper. In these schools there is a great enrollment of students who attend a very short time and who therefore cost very little money per pupil. Adding them to the whole for the state reduces the average cost for all.

Fourth: Even the decreased cost of high school education is very high as compared with the common schools, where the average cost per pupil is $38.04, only half as much as the high school figure of $76.72.

The high school is twice as expensive because the course of study is so differentiated that very many small classes of children are the result, and small classes cost as much as large ones. It is the small high schools that raise the cost per capita. High school teachers cost more than those of the elementary grades.

Fifth: The teacher's certificate granted upon examination by county boards of education has almost disappeared. Only 416 such certificates were granted in 1915, whereas during the same time 5,215 were granted upon credentials from institutions in and out of California. I believe it wise, however, to retain this form of certificate as a safety valve, to still allow a small opportunity for the ambitious young person who can not go away for an education.

Sixth: In 1903 the legislature passed a permissive law for the consolidation of school districts, under the name of Union School Districts. Thirteen years afterward, in 1916, there are 27 such districts in existence. The list has not increased during the past year.

Seventh: The Rigdon Bill in 1915 provided a permissive law for a postgraduate grammar school course of two years in addition to the eighth grade, in the schools of California. Under this, postgraduate courses have been adopted in 46 schools, with an enrollment of 411 pupils.

Eighth: There were 17,840 teachers at work in the state at the end of the biennium. In the elementary schools the proportion of women to men is still growing, being now about 10 to 1. In the high school the proportion is not so great, being 2,389 women to 1,610 men, or 1½ to 1.

Ninth: The schools have been growing as a whole. The valuation of sites, buildings and furniture in the elementary schools has increased in two years from 55½ millions to 58½ millions, the high schools 23 millions to 26 millions.

The average daily attendance has risen from 331,000 to 341,000.

The enrollment of children has climbed from 415,792 to 423,562.

The total expenditures for the elementary schools, however, have increased very slightly, less than $1000 for the whole state, while the high schools, with only one-fourth as many children, have increased nearly $300,000—three hundred times as much.

Tenth: The total expenditure of the state for educational purposes during the year just past amounts to a total of $36,927,109.05. Of this, the kindergartens expended one-half a million, the elementary schools twenty-one and a half millions, the high schools ten millions, the state university three millions and other state institutions one and a half millions. The exact figures may be found on the last page of this report.

The following table will show the teachers employed in the elementary and in the high schools each year for the ten years ending June 30, 1916, the total gain in that period and the average gain per annum as well as the gain per cent:

TEACHERS EMPLOYED.

Year	Elementary schools		High schools	
	Men	Women	Men	Women
1907	813	7,433	420	768
1908	839	7,763	480	834
1909	901	8,177	566	924
1910	920	8,530	649	1,062
1911	983	8,941	783	1,213
1912	1,011	9,663	910	1,402
1913	1,085	10,468	1,049	1,595
1914	1,162	11,104	1,206	1,791
1915	1,202	11,767	1,394	1,989
1916	1,238	12,080	1,610	2,389
Total gain	425	4,647	1,190	1,621
Average yearly gain	42.5	464.7	119	162.1
Percentage of gain	52.3	62.5	283.3	212—

The following table will show the total enrollment of pupils in the elementary and in the high schools and the average daily attendance per year for each of the ten years; the total gain, the average yearly gain and the percentage of gain:

ENROLLMENT OF PUPILS.

Year	Elementary schools	High schools	Average daily attendance	
			Elementary	High
1907	294,385	27,578	221,578	21,337
1908	298,295	32,014	232,325	24,267
1909	312,222	34,298	244,621	27.470
1910	322,361	39,115	252,321	30,893
1911	334.655	44,489	263,402	35,117
1912	356,945	47,420	280,485	38,181
1913	377,943	58,078	297.884	42,852
1914	402.024	65,927	319,229	48,312
1915	415,792	76,429	331,000	53,397
1916	423,562	95,405	340,943	58,881

The following will show the gains in boys and girls in each of the elementary and high schools:

	Elementary schools			High schools		
	Boys	Girls	Total	Boys	Girls	Total
Total gain	64,744	58.433	129,177	34,614	33,213	67,827
Average yearly gain	6,474	5,843	12,917	3,461	3,321	6,782
Percentage of gain	43	40.6	43.8	304.3	204.9	246—

The average daily attendance shows in the elementary schools 119.563 gain; an average yearly gain of 11,936; and a percentage of 53.8 gain. The high schools show a gain in average daily attendnce of 37,544; an average yearly gain of 3,754 and a gain in per cent of 176.

The following table will show the number of graduates from the elementary and from the high schools; the total gain for the ten years, the average yearly gain and the percentage of gain for each:

Year	Elementary schools			High schools		
	Boys	Girls	Total	Boys	Girls	Total
1907	5,371	7,312	12,683	1,100	1,790	2,890
1908	6,030	7,660	13,690	1,187	1,981	3,168
1909	7,314	8,799	16,113	1,495	2,281	3,776
1910	8,103	9,529	17,632	1,720	2,527	4,247
1911	8,671	9,774	18,445	1,864	2,892	4,756
1912	9,851	11,002	20,853	2,154	3,203	5,357
1913	11,794	10,695	22,489	2,606	3,951	6,557
1914	11,878	12,902	24,780	3,079	4,398	7,477
1915	13,480	14,029	27,509	3.525	4,851	8,376
1916	13,440	14,069	27,509	3,781	5,182	8,963
Total gain	8,069	6,757	14,826	2,681	3,392	6,073
Average yearly gain	807	676	1,482	268	339	607
Percentage of gain	151	92.4	117	243.7	133.7	210—

The following table will show the expenditure by years for salary of teachers and the *total* for elementary and high schools by years for ten years:

Year	Expenditures for teaching		Total expenditures	
	Elementary	High	Elementary	High
1907	$5,943,075 78	$1,315,000 73	$9,497,857 76	$2,529,680 79
1908	6,862,706 96	1,635,578 18	10,988,221 89	3,154,935 52
1909	7,399,445 69	1,808,766 81	12,734,320 87	3,119,886 36
1910	7,927,081 03	2,162,117 65	13,674,214 19	4,090,967 26
1911	8,663,088 89	2,552,965 00	14,555,469 52	5,632,396 19
1912	9,472,440 96	3,026,023 83	16,910,430 55	6,862,735 76
1913	10,694,708 07	3,657,759 50	17,350,951 51	7,925,946 75
1914	11,752,150 24	4,264,376 78	18,297,912 99	7,969,768 74
1915	12,062,538 24	4,658,442 87	21,661,138 74	9,643,866 93
1916	12,040,008 31	5,266,521 40	21,662,075 23	9,913,739 95
Total gain	$6,096,932 53	$3,951,520 67	$12,164,219 47	$7,384,059 16
Average yearly gain	609,693 25	595,152 67	1,216,421 94	738,405 91
Gain, per cent	102.5	300+	128+	291+

The following table will show the cost per pupil per year for teacher's salary and for supplies; also the total gain for the ten-year period, the average gain and the per cent of gain:

AVERAGE COST PER PUPIL.

Year	For teachers' salaries		For supplies	
	Elementary schools	High schools	Elementary schools	High schools
1907	$26 82	$61 63	$7 06	$19 79
1908	20 93	67 47	6 30	20 12
1909	30 20	65 11	7 80	20 15
1910	31 41	70 00	8 98	21 32
1911	32 90	72 80	10 77	20 61
1912	34 00	79 25	9 55	30 17
1913	36 00	85 35	11 18	34 70
1914	36 81	88 27	9 90	30 01
1915	36 44	87 24	12 11	34 71
1916	38 24	91 14	11 30	30 55
Total gain	$11 42	$29 51	$4 24	$10 76
Average annual gain	1 14	2 95	42	1 07
Percentage of gain	42.6	48	60	54

The following table will show the valuation of property in the elementary and high schools for the ten years beginning June 30, 1907, and ending June 30, 1916:

VALUATION OF PROPERTY.

Year	Elementary schools	High schools
1907	$26,977,787	$5,626,200
1908	28,066,326	6,571,382
1909	30,718,246	7,933,560
1910	34,714,167	9,601.274
1911	37,647,555	11,587,972
1912	38,879,480	14,211,162
1913	45,175,200	17,585,601
1914	49,157,272	19,412,613
1915	55,566,467	23,786,827
1916	58.600,496	26,588,670
Total gain	$31,622,709	$20,962.476
Yearly gain	3,162,270	2,096,247
Percentage of gain	117.2	369

The most remarkable showing in these tables is the fact that the enrollment in the elementary schools has increased 43 per cent for the boys and 40.6 per cent for the girls while the graduation has increased 151 per cent for the boys and 92.4 per cent for the girls. In the years gone by the boys were dropping out of the schools in the fifth and sixth grades. We are not holding all of them now but this showing is very creditable for the schools.

The high schools can not show such great gain in the graduation over enrollment as the night high schools have many thousands in them who are there simply from day to day to get certain work. This holds the cost per pupil down in these schools too. But the gain of 304.3 per cent in enrollment of boys and 204 per cent in the enrollment of girls with a gain in graduation of 243.7 per cent in the graduation of boys and 133.2 per cent in the graduation of girls is a very good showing. The fact that the schools are holding the boys indicates that they are meeting the needs of the people.

DIRECTORY.

STATE BOARD OF EDUCATION.

(Appointed by the Governor.)

Name of member	Term expires	Address
E. P. Clarke	August, 1914	Riverside.
M. B. Harris†	August, 1917	Fresno.
Mrs. O. Shepard Barnum	August, 1917	312 S. Fifth st., Alhambra.
Mrs. Agnes Ray	August, 1916	272 Twenty-third st., Oakland.
George W. Stone	August, 1916	Santa Cruz.
Marshall De Motte	August, 1915	Corning.
Charles A. Whitmore*	August, 1915	Visalia.

*Appointed to fill term left vacant by resignation of Lawrence E. Chenoweth of Bakersfield.

†Appointed to fill term left vacant by resignation of Wm. H. Langdon of Modesto.

NOTE.—Edward Hyatt, Superintendent of Public Instruction, is Secretary of the Board, according to law.

Assistant Superintendents of Public Instruction or Commissioners of Education.

(Appointed by State Board of Education. Took office January 1, 1914.)

Edwin R. Snyder, Commissioner of Vocational Education .... Santa Barbara
Will C. Wood, Commissioner of Secondary Schools .... Alameda
Margaret E. Schallenberger McNaught, Commissioner of Elementary Schools .... San Jose

Employees of State Board of Education.

C. S. Pixley, Chief Clerk .... Riverside
Mrs. Florence Argall, Stenographer .... Sacramento
Miss Marion H. Ketcham, Clerk .... Sacramento
Miss Eva E. Hays, Clerk .... Sacramento
Miss Mabel Baldwin, Stenographer .... San Francisco
Mrs. Marion G. Burgess, Stenographer .... Sacramento
Miss Abbie B. Telfer, Stenographer .... Sacramento

County Superintendents of Schools.

(Term expires January, 1919.)

County	Name and address	
Alameda	Geo. W. Frick	Oakland
Alpine	Mrs. Josephine Vallem	Sheridan, Nev.
Amador	Mrs. W H. Greenhalgh*	Jackson
Butte	Mrs. Pearle Rutherford†	Oroville
Calaveras	Teresa Rivara	San Andreas
Colusa	Perle Sanderson	Colusa
Contra Costa	Wm. H. Hanlon	Martinez
Del Norte	Jos. M. Hamilton	Crescent City
El Dorado	S. B. Wilson	Placerville
Fresno	E. W. Lindsay	Fresno
Glenn	S. M. Chaney	Willows
Humboldt	Geo. Underwood	Eureka
Imperial	A. P. Shibley	El Centro
Inyo	Mrs. M. A. Clarke	Bishop
Kern	L. E. Chenoweth	Bakersfield
Kings	J. E. Meadows	Hanford
Lake	Minerva Ferguson	Lakeport
Lassen	F. Brunhouse	Susanville
Los Angeles	Mark Keppel	Los Angeles
Madera	Craig Cunningham	Madera
Marin	Jas. B. Davidson	San Rafael
Mariposa	John L. Dexter	Mariposa
Mendocino	Mrs. Anna Porterfield	Ukiah
Merced	Margaret Sheehy	Merced
Modoc	Mrs. Nettie B. Harris	Alturas
Mono	Mrs. A. M. Hays	Bridgeport
Monterey	Geo. Schultzberg	Salinas
Napa	Lena A. Jackson	Napa
Nevada	R. J. Fitzgerald	Nevada City
Orange	R. P. Mitchell	Santa Ana
Placer	Irene Burns	Auburn
Plumas	Mrs. Kate L. Donnelley	Quincy
Riverside	Raymond Cree	Riverside
Sacramento	Carolyne M. Webb	Sacramento
San Benito	W. J. Cagney	Hollister
San Bernardino	Mrs. Grace C. Stanley	San Bernardino
San Diego	John F. West	San Diego
San Francisco	Alfred Roncovieri	San Francisco
San Joaquin	John W. Anderson	Stockton
San Luis Obispo	W. S. Wight	San Luis Obispo
San Mateo	Roy W. Cloud	Redwood City
Santa Barbara	Mamie V. Lehner	Santa Barbara
Santa Clara	D. T. Bateman	San Jose
Santa Cruz	Champ S. Price	Santa Cruz
Shasta	Mrs. Charlotte Cunningham	Redding
Sierra	Belle Alexander	Downieville
Siskiyou	W. H. Parker	Yreka
Solano	Dan H. White	Fairfield
Sonoma	Florence M. Barnes	Santa Rosa
Stanislaus	Frank Bacon	Modesto
Sutter	Lizzie Vagedes	Yuba City
Tehama	Mamie B. Lang	Red Bluff
Trinity	Maude I. Schroter	Weaverville
Tulare	J. E. Buckman	Visalia
Tuolumne	G. P. Morgan	Sonora
Ventura	Jas. E. Reynolds	Ventura
Yolo	Harriett S. Lee	Woodland
Yuba	Jennie Malaley	Marysville

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*Superintendent Greenhalgh died February, 1916. Mrs. Greenhalgh was appointed to succeed.

†Mrs. Minnie Abrams died December, 1913. Mrs. Rutherford was appointed to succeed.

County superintendents are secretaries of their respective county boards of education.

City Superintendents of Schools.

City	Name and county	
Alameda	C. J. Du Four	Alameda
Alhambra	Charles E. Barber	Los Angeles
Bakersfield	D. W. Nelson	Kern
Berkeley	M. C. James	Alameda
Chico	Chas. H. Camper	Butte
Eureka	Geo. B. Albee	Humboldt
Fresno	C. C. Starr	Fresno
Long Beach	W. L. Stephens	Los Angeles
Los Angeles	J. H. Francis	Los Angeles
Marysville	Jennie Malaley	Yuba
Modesto	J. C. Templeton	Stanislaus
Oakland	A. C. Barker	Alameda
Oroville	H. P. Short	Butte
Palo Alto	Walter H. Nichols	Santa Clara
Pasadena	J. M. Rhodes	Los Angeles
Pomona	G. Vernon Bennett	Los Angeles
Richmond	W. T. Helms	Contra Costa
Riverside	A. N. Wheelock	Riverside
Sacramento	C. C. Hughes	Sacramento
Salinas	L. E. Kilkenny	Monterey
San Bernardino	Roy B. Stover	San Bernardino
San Diego	Duncan MacKinnon	San Diego
San Jose	Alex. Sherriffs	Santa Clara
San Luis Obispo	A. H. Mabley	San Luis Obispo
San Rafael	David R. Jones	Marin
Santa Ana	J. A. Cranston	Orange
Santa Barbara	A. C. Olney	Santa Barbara
Santa Cruz	J. W. Linscott	Santa Cruz
Santa Monica	Horace M. Rebok	Los Angeles
Santa Rosa	T. F. Brownscombe	Sonoma
Stockton	Ansel S. Williams	San Joaquin
Vallejo	G. V. Whaley	Solano
Ventura	A. L. Vincent	Ventura

PART IV.

REPORTS OF COMMISSIONERS.

LETTER OF TRANSMITTAL.

SACRAMENTO, CALIFORNIA, August 21, 1916.

The Honorable State Board of Education,
Sacramento, California.

LADIES AND GENTLEMEN:

In compliance with the state law of California—Political Code, section 1519—I have the honor to submit to you the biennial report of the Commissioner of Elementary Schools, beginning June 30, 1914, and closing June 30, 1916.

Very respectfully yours,

MARGARET SCHALLENBERGER MCNAUGHT,
Commissioner of Elementary Schools.

BIENNIAL REPORT OF THE COMMISSIONER OF ELEMENTARY SCHOOLS.

Section 1520 of the Political Code defines the duties of the Elementary Commissioner of Schools as follows:

> §1520. The Commissioner of Elementary Schools shall visit the elementary day and evening schools of the several counties of the state, and investigate the course of study adopted in such schools. He shall enforce the use of the state textbooks and shall report to the State Board of Education his findings, and shall make such recommendations to the State Board of Education as he may deem best, and shall perform such other duties as may be assigned by the Superintendent of Public Instruction, under the direction of the State Board of Education.

DUTIES OF THE OFFICE.

School visits.

Visits are made to schools for the purpose of coming into immediate touch with them and gaining a direct understanding of their various conditions; partly to carry to them information concerning the best things that are doing in like schools, elsewhere in the state, and partly to awaken trustees, teachers and parents to the needs of their schools and to excite in them a sympathy with the onward and upward movements that are carrying our educational processes to higher levels from year to year. Many such visits have been made, usually in company with the county or city superintendent, or his assistant, or a supervisor. The commissioner finds that it is best in making such visits to have a special object in view, *e. g.*, one period of four days' duration in the city of Los Angeles was divided as follows: one day was spent in visiting nature study classes, another in visiting music classes; evening schools were visited for the purpose of studying the education of the adult immigrant and two days were given to the study of school gardens. The presence of the supervisor is helpful, for it offers opportunity for questions and discussion. Sometimes, however, the commissioner has visited alone and very quietly.

In two counties nearly every school has been visited: San Benito, in the spring of 1915, and Placer County in the spring of 1916. Every school in San Benito County was visited, and all but three in Placer County. The time spent in San Benito County was six days; in Placer County, sixteen days. An address was made at every school visited and evening public addresses followed the day-time work.

In each of these educational tours the main object of the visit was improvement of conditions. The tour was a tour of inspection, and the superintendents, teachers, trustees, children and school patrons had been looking forward to it for several months. The county superintendent accompanied the commissioner in both instances.

Great improvements in school buildings and equipment, a general air of cleanliness and increased interest in school life all testified to the beneficial effects of this form of visitation. One immediate and most encouraging effect of this educational campaign was manifested when the supervisors of Placer County voluntarily raised the school tax seven cents.

There is no doubt that the people of each of these counties were benefited, not only by what the commissioner brought them, but by what they learned from one another. They were set thinking of the importance of education and of their responsibilities to the children, and they learned how much it helps toward the success of a school to have the people understand its aims and be actively interested in its welfare.

In serving the schools they were given a clearer conception of their own importance as helpers.

Other counties or portions of counties will be visited in the same way as time and opportunity permit.

Public addresses.

Addresses have been made upon request of those desiring them, unless conflict of engagements or necessary office work prevented. During the past two years 184 public addresses have been given, some of which required not a little special preparation, while others have been less formal in character. They have been given to various audiences as the following list indicates:

Parent-Teacher Associations,
Trustees' Conventions,
Civic Clubs,
Farm Adviser Conventions,
State Normal Schools,
University Farm School Students,
Country-Side Gatherings,
California Federation of Women's Clubs,
Daughters of the American Revolution,
Children in the Elementary Schools,
Boys and Girls in the High Schools,
Graduates of High Schools,
Graduates of Elementary Schools,
Audiences Assembled at Dedication of School Buildings,
Library Conventions and Students,
Teachers' Associations (State, County and City).
Faculties of Schools,
American Hygiene Association,
International Kindergarten Union Association,
Citizens Contemplating Formation of Union Schools.

During the convention of the National Education Association, August, 1915, held in Oakland, the commissioner, having been elected chairman of the elementary section, was in charge of the program.

International jury of awards.

In April of the same year she served as a member of the International Jury of Awards at the Panama-Pacific International Exposition.

Legislation.

While the legislature was in session the commissioner gave her assistance to the committees on education.

TEXTBOOKS.

A textbook, if it is to be ideally serviceable, must be interesting both to the child who studies it and to the teacher who uses it as an aid in directing the growth of the child's mind.

Children are not all alike in their tendencies; teachers differ widely in knowledge and in skill. How then can it be hoped to choose textbooks for state-wide use which will serve equally well all of the children and all of the teachers? Because of the differences noted it is not possible to do this; but by taking thought and by taking time and by utilizing a number of able minds in honest, earnest, serious investigation, it is possible to choose textbooks that will serve all the children and all the teachers of a great state well.

In making this biennial report the commissioner wishes to restate what has been said in previous reports, namely, that the greatest care has been taken in the examination and choice of all books selected for the elementary schools, that the best of those submitted was selected each time, and that she is confident the results of the choices made will be in a high degree beneficial.

In the report of 1914 is found this statement: "The commissioner recommends that the State Board of Education take such action as will ensure the provision of the best reading and literature textbooks available for the elementary schools." Such action has been taken. It is with more than ordinary satisfaction that the report of the result of this action of your honorable board is made as follows:

In July, 1915, the State Board of Education adopted for the first and second grades the Free and Treadwell Primer, First and Second Reader; for the sixth, seventh and eighth grades, Literature Readers: the Sixth Year Literature Reader, the Seventh Year Literature Reader and the Eighth Year Literature Reader, written and compiled by Leroy E. Armstrong.

The Free and Treadwell Readers are content rather than method readers, though the teacher is not left helpless as to method, for a manual for teachers accompanies the books, providing a suggestive phonetic method. Admirably illustrated by the artist, Frederick Richardson, these books will be enjoyed by the children because they are beautiful and read by them because they are readable.

Adoptions and recommendations.

Bids have been advertised for a textbook in civics and such books are now being considered.

A speller bulletin was issued by the State Board of Education in 1915. and much information regarding the subject of spelling has come to the office as a result. The commissioner recommends that this information be carefully examined with a view to action by the State Board of Education on the adoption of a speller, since the contract for the books now in use has expired.

The contract for the textbook in hygiene expires in 1916. In making recommendations concerning adoption for this textbook the situation is complicated by a recent ruling of the Attorney General. Textbooks in hygiene, he rules, are under the law, section 1665 of the Political Code, not required. Those now in use, the Attorney General states, may continue to be printed, but no new adoption can be made. The commissioner recommends that steps be taken to amend the law now in force which prevents the adoption of another textbook in hygiene.

At the same time as the adoption of the Free and Treadwell Readers, the Holton-Curry Third Reader was selected. This book also is charmingly illustrated by Frederick Richardson. It, too, is an interesting book: it fits well into the series and is accompanied by a teachers' manual.

Never before has the state provided textbooks in reading for the upper grammar grades. These books will mean for many a boy and girl a new world, the world of literature. They have been written in such a way that they are the "good friends" of both teacher and pupil. Providing helpful study questions they save the busy teacher's time. while the "pleasure reading" suggestions lead the child from the textbook into a broader field of literature.

In July, 1915, also, the Zaner Writing Books were adopted. These compendiums give to each child a veritable textbook which in itself is a teacher. It is a system that has proved its efficiency so no risk is being taken in its adoption.

A new elementary history was adopted in July, Mace's Beginner's History. Well illustrated, grouping its facts around great American characters and containing an added chapter on great American women and a supplement, written by Percy F. Valentine, adopted in March, 1916, dealing with California history, this book is being warmly received.

In December, 1915, the State Board of Education adopted for the fourth and fifth grades the Progressive Road to Reading readers. Many changes were made in these readers as to grouping of selections, and new subject matter was introduced. Additional material for these books is still under consideration.

Advertisements calling for bids on language books have been published, the contract for those now in use having expired in 1916, and textbooks submitted are now being examined.

The contract for textbooks in geography also expired in 1916, but because of boundary changes likely to result from the war in Europe it is not deemed advisable to advertise for new geographies at this time.

Since the contracts for textbooks in arithmetic and in history for the upper grammar grades expire in 1918, it is suggested that preliminary examination of textbooks in these subjects be begun.

CALIFORNIA BLUE BULLETIN.

The value of the California Blue Bulletin, issued quarterly and edited in turn by the State Superintendent of Public Instruction and the three commissioners can not easily be estimated. Evidence that it is well serving the elementary schools is brought to the commissioner in letters of congratulation, in the cheerful co-operation of those who have contributed facts for publication, in an increasing number of requests from men and women interested in the progress of the public schools to have their names placed on the mailing list, and in repeated assurances of teachers and of trustees that it is a source of suggestion and of immediate helpfulness. In some school districts the children as well as the teacher look eagerly forward to its arrival.

The first number was issued March, 1915, the sixth and latest number in June, 1916. Of these the Commissioner of Elementary Schools edited No. 3, of Vol. I, and is to edit the next number, No. 3 of Vol. II. This publication goes to every district in the state, thus carrying to the youngest and the humblest and the most remote elementary teacher the same message as is received by those older or wiser or more centrally placed. It is a link as it should be between the central office and the common school, holding them together by means of its demonstration of common interests, common problems and common aims. No work connected with the office is more willingly undertaken than that which expresses itself in the columns of the Blue Bulletin.

OTHER BULLETINS.

Bulletin on good manners.

Realizing the difficulty of teaching morals and manners, subjects which are required by law to be taught, the commissioner has prepared as a help to the elementary teachers of the state a bulletin on good manners. In all education, manners should be taught as matters of sufficient value to be studied for themselves, not merely as minor parts of health laws, good conduct or school discipline. Advance chapters of "Suggestions for the Teaching of Good Manners in the Elementary

Schools'' have appeared from time to time in the Blue Bulletin. In its completed form it will be printed as a supplement to No. 3, Vol. II, the next issue. Later it will be published as a separate bulletin.

Bulletin No. 13, Union of School Districts.

That there will always be one-room schoolhouses as long as there are people living too remote from one another to unite in maintaining a larger and better equipped school, is a matter of course. That such schools under inspiring teachers do good work is indisputable. The whole history of education, from the earliest days, proves it. Many of the world's ablest men learned their first lessons in such schools and received their first impulses in worthy ambitions from such teachers.

A progressive people, however, are never content that a former good stand fast, when opportunity offers advancement and improvement. Ample experience in every activity attests the superiority of large centers of co-operation and control over small ones. ''In union there is strength'' said the fathers of the republic when they combined for independence; and we who have profited by the independence they won should also profit by the wisdom their example teaches.

In order to call the attention of people of rural communities to the advantages to be gained by the formation, where feasible, of union school districts as provided for in section 1674 of the Political Code, Bulletin No 13, was issued in April, 1916. It has already proved its value. Hundreds of copies have been distributed, intelligent interest has been aroused, and it has done its part in bringing about what it is intended for: union of school districts.

Bulletin No. 15—Suggestions for the teaching of music in the rural elementary schools.

Music is one of the most important studies the state requires of its schools; but the present school law provides no textbooks for instruction in music. As a consequence, the methods of teaching music have been as various as the conditions of the schools and the dispositions of those in charge of them. In some of our cities where textbooks in music are provided out of the library fund and where competent instructors are employed to supervise the classroom teaching and practice, the instruction in music and the results obtained, are worthy of all commendation.

In many places, however, there is a lack of textbooks, of supervision, and of proper instruction; and too often a lack also of knowledge of available means of overcoming these disadvantages. To assist and promote the teaching of music in such schools a list of songs, at the request of the commissioner, has been prepared by the musical directors of the state normal schools, with titles of books and prices and names of publishers. Suggestions also are given for elementary voice training.

This list and the suggestions have been printed and distributed during the past two months as Bulletin No. 15. It is too early yet to report upon the results of this publication further than to state that it is receiving a warm welcome. It is planned to follow this bulletin on music by others.

Bulletin on "Disposal of Sewage in Rural Districts."

A bulletin generously prepared by Mr. C. G. Gillespie, C. E., director of the Bureau of Sanitary Engineering, State Board of Health, with the assistance of the commissioner, on "Disposal of Sewage in Rural Districts" is now ready for publication. It is for the use of trustees and county superintendents, to aid them in their efforts in establishing sanitary conditions of school life.

The commissioner has long felt the need of such material and is confident that a message written especially for the use of these officials can not fail to have a special effect.

Union, rural and open-air schools.

The right of all children of a given community to equal opportunities of education is one that Thomas Jefferson might have included in the Declaration of Independence along with life, liberty and pursuit of happiness, as self-evident truths. Certainly no American of this generation would dispute it as an abstract proposition. We aim in every community to provide equal education for children, so far as the community is able to give it and the children are able to receive it. We fall far short, however, of attaining that aim and the failure is most discreditable in many rural districts where in spite of all improvements in farm machinery and household implements, better roadways and the substitution of motor cars for ox carts, and of all the thousand other results of advancing civilization "The Little Red Schoolhouse" remains much as it was in the days when the memories of pioneer school boys and girls made it a subject of sentiment along with the swimming hole and the picnic grove.

In our cities and towns, even in some of our small towns, the construction of school buildings and the systems of school instruction have gone in many ways beyond what was deemed "collegiate" fifty years ago, but in too many rural districts, the course of education flows feebly, or stagnates, in a one-room building where a single teacher tired to indifference or fretted to irritation, without the cheer of congenial companionship, teaches in wearisome iteration, all grades of elementary pupils in all kinds of elementary studies required by law to be taught.

The evil of this defective rural education has been felt and recognized all over the United States, and in every progressive community an earnest effort is under way to put an end to it. The plan adopted to that end is the elimination as far as possible of all one-room schools. In

California we have a law providing for union schools; but our people are slow in taking advantage of it, yet no other educational movement in our state is more pressingly needed for the care of present ills, or imports more for the welfare of the future than does this. The object is to provide for the children of rural districts opportunities for school instruction that shall be approximately equal to those given to children of the cities. That equality can not be given in a one-room school taught by a single teacher.

Investigation discloses the fact that there are only 27 elementary union schools in the state, while there are over 2,300 one-room schools. Some of our county superintendents, however, are strongly urging ''consolidations'' wherever feasible and occasionally a union is made. Only a few days ago one was formed in Monterey County, but it required a high degree of direct effort on the part of the superintendent and his teachers, which was indirectly strengthened by means of the commissioner, the Federation of Women's Clubs, the Department of Agriculture of the University of California and the Department of Education of Stanford University.

One of the greatest objections to the plan is found in the problem of transportation. With the multiplication of good roads this objection is becoming less and less serious, but the present limitation of 15 cents per day for pupil transportation should be abolished.

The commissioner has been giving time and service to the furtherance of elementary union schools. A bulletin on the subject, prepared by Miss Martha M. Trimble and submitted by the commissioner, is doing much to spread knowledge among the people on the advantages to be gained in union of districts.

Rural school improvements.

In response to a request from the United States Bureau of Education, that a report be sent to Washington concerning a year's progress in rural community conditions, data has been gathered from various sources—educational, civic, governmental, etc. This data was collated by two Stanford graduate students, Mr. W. E. Baker and Mr. A. S. Krause, credit for the work being given in the Department of Education. The work has just been completed and was well done. It will be forwarded to Washington.

Open-air schools.

In co-operation with Mr. Guy P. Jones of the State Board of Health, a study was made last year of open-air schools in the state. It was learned that about 13,000 children, for part of the year at least, are housed in open-air schools and nearly half of these are in rural districts. While it must not be assumed that these buildings are all what might be called ''standard'' open-air schools, yet they are so designated in their communities. This term shows that a movement in the right direction has been begun, that a certain amount of interest and intelligence in regard to good air exists, and are bound to find expression sooner or later in all school architecture. The open-air court around which many schools are being built shows the effect of the influence of open-air schools on school architecture. There is no state in the union in which climatic conditions are more favorable to large numbers of open-air schools than California. The commissioner is advocating these buildings or modifications of them wherever it is practicable to build them.

RECOMMENDATIONS.

During the past year the elementary schools of the state, the schools in which all children of the state receiving public education must be trained, the schools which are the direct avenue to the high schools and to the university, the schools which furnish the only schooling ever obtained by the great mass of our citizens: during the past year these schools from lack of money to finance them have been forced to shorten the school term.

The schools which have suffered most are usually the rural schools of sparsely settled communities, though Los Angeles County has shortened her school term 13 days, and San Francisco (city and county) 17 days. The average loss for the state is 8 days. Thirty-eight counties have thus suffered, the loss of time varying from 1 to 19 days.

This brings before us the serious consideration of an increase of funds for the maintenance of the elementary schools.

How much of this should be provided by the state and how much should come from county taxation ought also to be determined. While the state is giving and should continue to give help to the most humble and remote school within her borders, yet the counties should not be negligent nor should local communities of districts be made to bear an undue proportion of the responsibility of providing adequate funds to finance the elementary schools, as for example, is the condition in Los Angeles County.

The following eighteen counties of the state are not providing as much money as the state gives: Alpine, Amador, El Dorado, Lake, Los Angeles, Mendocino, Nevada, Riverside, San Bernardino, San Diego, San Joaquin, San Luis Obispo, Shasta, Sierra, Siskiyou, Sonoma, Stanislaus, Tuolumne.

In view of these facts, the commissioner recommends such legislation as will provide sufficient funds to enable all elementary schools in the state to maintain a school term of at least 180 days.

The rural teacher working alone, unsupervised, which means uncriticised, unencouraged, and uninspired must needs have a high degree of initiative, perseverance and devotion if she steadily holds throughout years of service the ideals with which she began her work and must possess these qualities in an extraordinary degree if she raises them. Too often she loses courage and either leaves the rural school for one which offers better conditions for growth in the city, or becomes more and more a school keeper and less and less a school teacher.

Among our state normal school faculties who train teachers *for* the profession there are certain members who are peculiarly well-fitted to train teachers *in* the profession. The state is not taking advantage of this talent. Moreover, no matter how able an instructor may be, his efficiency is greatly increased by first-hand knowledge concerning that which he is teaching.

Therefore in order to provide some measure of supervision, which means giving knowledge, criticism, encouragement and inspiration, for all teachers in service; in order to make use of a power already at hand in our normal schools, available but neglected; and in order to improve the teaching service of the normal schools themselves, the commissioner recommends that each of the eight state normal schools be provided with funds sufficient for keeping one member of the faculty—not the same one—continuously in the field throughout the school year, whose duty it shall be to visit and supervise, in co-operation with the county superintendent, elementary teachers outside of cities.

The law providing for the transportation of pupils—section 1617—twenty-second—limits the cost to the district to not more than fifteen cents per pupil transported per day. This law frequently prevents the formation of union elementary schools. The commissioner recommends therefore that this law be amended in such a way as to leave the matter of cost of transportation to the union school in the hands of the trustees of the various districts forming the union and the county superintendent of schools.

The present enrollment in the elementary schools is 423,562, a gain of 7,770 over the enrollment of the previous year and of 21,538 over the enrollment for 1914.

The average daily attendance for the past year is 340,943, a gain of 9,943 over that of 1915, and 21,714 over that of 1914.

The striking fact in these figures is that while the net gain in enrollment for the present school year is 7,770, the net gain in average daily attendance is 9,943.

This gain in average daily attendance is most gratifying and is all the more striking when the fact of evening schools is considered. These schools, because of the personnel of the pupils, can not keep up a high standard of average daily attendance. Yet, notwithstanding this element of loss, the net gain for the state is 9,943.

The causes for this condition can not at this time be accurately determined. They may be due to better general health conditions, to better service of the truant officer and of the city school nurse, to more attractive courses of study which tend to hold the children in school, or to the law providing a new method for counting attendance, which went into effect at the beginning of the last school year; or they may be due to a combination of all of these.

Since the abolition of the poll tax the elementary schools have been greatly hampered by the loss of income. Terms have been shortened, necessary improvements have been blocked, schools overcrowded, and teachers handicapped for lack of equipment. The loss to the elementary schools last year, due to the abolition of the poll tax, was about $180,000. This year it will reach at least $200,000. The total expenditures for the elementary schools have increased hardly at all. They are less than $1,000 for the whole state, while the high school expenditures have increased during the same time nearly $300,000 and the high school enrollment is only about one-fourth that of the elementary schools. The commissioner recommends, therefore, in order to give to the elementary schools an adequate sum for their maintenance and needed improvements, that the basis of compilation upon which the State Controller transfers funds from the general fund of the state to the school fund be not less than twenty dollars for each child in average daily attendance in the elementary schools.

While there are good teachers everywhere that are not professionally trained, yet undoubtedly these same teachers professionally trained would render better service. It is the desire of the state to have each of her servants give the best service of which he is capable. Opportunities for training by means of our eight normal schools have increased to such an extent that the cases are rare of inability to obtain professional training without entailing hardship on the one seeking it.

The commissioner called attention in her last report to the comparatively few certificates now granted upon examination. She also recommended in that report raising the standard of those eligible to examination for elementary certificates to that of high school graduates. This law was passed and limits to a certain extent those applying to be certificated on examination.

In order that each county in the state may exercise the greatest care possible in certificating elementary teachers and in order to provide a greater number of professionally trained teachers, the commissioner recommends that a law be passed which shall provide that no certificate granted on examination in one county shall be valid in another.

In order to serve trustees and school patrons interested in providing the best possible schools, the commissioner recommends that a bulletin be prepared at an early date, under the direction of the State Board of Education, containing plans for rural school buildings, the plans to be drawn and described in such a way as to be of direct and practicable service. Among these plans the open-air school should find a place.

In view of the fact that it is impossible to provide a textbook in hygiene other than the book now in use, and that no textbook in music can be adopted, the commissioner recommends that the laws now in force concerning the adoption of state textbooks be so amended as to make adoptions of all statutory textbooks discretionary with the State Board of Education.

More and more reasons are being advanced for giving to the children of the elementary schools their textbooks outright, with a requirement that in case of loss or serious injury they be replaced at private expense. Chief among these reasons is that of sanitation. The clean, healthy child, it is urged, should not be compelled to use textbooks which have been handled for a year or more by those that are uncleanly or unhealthy, or both.

Moreover, it is generally admitted that the interchange of textbooks is a means of spreading contagious diseases. When a contagious disease is prevalent, those who are ill are out of school. Average daily attendance is a factor of high importance in the school revenue. It is obvious, therefore, that it is not in accordance with good business policy for the school to take chances, through the common use of textbooks, of lowering the average daily attendance.

The commissioner recommends, in order to protect the health of the elementary school children of the state and in order to safeguard the school revenue, as well as for aesthetic and other reasons, that the State Board of Education take such action as will ensure to these children the free gift by the state of their textbooks.

Recognizing the value to school trustees, superintendents and teachers of the state, of a knowledge of the office and work of the State Board of Education as given directly to them by the members themselves, the commissioner recommends that your honorable board extend as far as possible its policy of visiting schools, attending teachers' institutes and other educational gatherings, trustees' conventions, etc., making addresses and taking part in discussions as occasion offers.

In order to provide better opportunities for the children of the small rural districts, the commissioner recommends such legislation as will prevent the lapsing of the district, but will permit any number of children less than eight to attend temporarily the nearest convenient school and that the appropriation of the school money be transferred to the school attended.

STANDARDIZATION OF STATE NORMAL SCHOOLS.

In standardizing the state normal schools the State Board of Education has performed the greatest service which has been rendered the elementary schools during the biennium.

Irregularity in the training offered students in these schools has been puzzling to those employing teachers, and confusing to the children taught. Much that has long been required by law has now been definitely provided for. No normal school has lost its individuality, yet a definite policy has been outlined for all of them which will make clearer the meaning of a state normal school diploma. Trustees in engaging a teacher will know what to expect.

(1) Certainly it is not asking too much to require of teachers who are to teach the common branches that they themselves know these branches. This knowledge is now assured—students, before graduation, must have passed a satisfactory examination or completed courses in the normal school in reading, writing, spelling, English grammar, composition, arithmetic and geography.

(2) Graduates of normal schools serve a sort of apprenticeship for two or three years in the rural schools. City boards of education require this. It is essential, therefore, that the children of the rural schools be safeguarded. Standardization does safeguard them.

At present it is the exception that a teacher of a one- or two-room school—and there are nearly 3,000 such schools in the state—is qualified to teach elementary science. We hear much about the value of intermediate schools as directly serving the need in this respect for our upper grade grammar children, but where there are no intermediate schools, or even union elementary schools, children are given either no instruction in science or mere book instruction, which often kills the desire for its further study. Standardization will provide the rural schools with teachers who can teach applied elementary science.

Music, though one of the required subjects, is not taught at all in some hundreds of schools, in other hundreds mere rote singing, undirected and uncriticized, is all the activity noticeable. No teacher may be graduated now from the normal school who has not had at least a year's training in music.

Elements of Agriculture, Elements of Applied Sociology, Physical Education and School Playground work are all emphasized, giving the elementary teacher a broader outlook on life and keeping her constantly in mind that she is teaching children and not subjects.

In uniting the work of the high school with that of the normal school, attention to the would-be teacher is brought six years before she is ready to qualify for service instead of, as too frequently happens, two years. It is obvious that one, whose choice of a profession has been made, brings to the study of any subject a certain attitude of mind that is of great value. The four years' training in high school will be made to count for teaching as well as for life.

A sufficient number of electives are provided for to enable a student to specialize to a certain degree along the lines of individual tendency. Standardization does not mean machine-made teachers.

Already the new ruling is having results in additions made to high school courses and in efforts on the part of high schools for better preparation in the elementary schools. A letter recently received by the commissioner from the principal of a rural high school urges her to place before the district trustees the necessity of employing teachers for the elementary schools who can and will teach music, as it is impossible to give adequate training in music in high schools to unprepared pupils. Thus pressure will be brought from various sources to the end that the elementary schools will be taught by men and women who are qualified to teach them. The teacher is the most important factor in elementary education.

CO-OPERATIVE FORCES.

In the first annual report covering the period from January 1, 1914, to June 30, 1914, the Commissioner of Elementary Schools in setting forth the intent of the legislature in creating the office, directed attention to the various educational agencies in the state which either directly or indirectly affected the work of the elementary schools, and were therefore to a greater or less extent co-operative with the newly-created office. It is evident that the efficiency of the office depends largely upon the degree of co-operation with which mutually interacting forces can be brought into harmony so that their joint action may be directed to the best attainable ends in each successive year of school work.

It is with gratification, therefore, that the Commissioner of Elementary Schools is able to give in this biennial report an appreciative recognition of helpful work done for the elementary schools not only by educational officers, educational departments in various institutions and educational organizations: members of boards of education, faculties of normal and high schools, principals and teachers of elementary schools and professors in the departments of education of our two great universities, the California State Teachers Association with its Council of Education and other organizations of teachers; but by governmental agencies of the state and voluntary associations of citizens organized for social service of various kinds. The fact that these state and voluntary agencies are not directly connected with the public school system makes their service of peculiar interest.

It is especially gratifying that the aid given voluntarily has been directed mainly toward improving the conditions of the schools of districts remote from the centers of wealth and culture. These rural schools have to face some of the most serious problems of elementary teaching, and in the cases of many such schools, the solution of these problems is made more difficult by lack of funds, sparseness of settlement, insufficient means of communication and lack of understanding of the real needs of boys and girls in the way of school instruction and school equipment in our time.

Much service rendered the common schools by these various agencies is of such a nature that it does not come strongly into the foreground of public consciousness, but when an insanitary, old schoolhouse, long past its usefulness, carelessly set in the center of a small, bare schoolyard, is replaced by a comfortable, modern, well-equipped building, surrounded by acres of grounds shaded by fine trees and having ample space for playgrounds and garden plots, illustration is offered of the effect of the work of these agencies.

The state agencies whose aid in advocating various movements for improvement in the elementary schools during the past two years has been most marked by distinct achievements are:

The State Commission of Immigration and Housing,
The State Board of Health,
The State Library,
The State Board of Forestry,
The College of Agriculture of the University of California.

The volunteer agencies are:

The California Association for the Study and Prevention of Tuberculosis,
The California Federation of Women's Clubs,
The California Congress of Mothers and Parent-Teacher Association,
The Daughters of the American Revolution.

The work of each of these has been so extensive and so full of import for the immediate future, as to require specific report as follows:

COMMISSION OF IMMIGRATION AND HOUSING.

A law providing for the Home Teacher was passed in 1915. This law had its origin and received its chief support from the Commission of Immigration and Housing. It provides for the employment of home teachers by school trustees or city boards of education. These teachers are to work in the homes of the pupils, instructing both children and adults. Two such teachers are now at work, one in Los Angeles, one in San Francisco.

A report of work done in Los Angeles with practical suggestions has been published in a leaflet by the Commission of Immigration and Housing, entitled, "The Home Teacher." This work in the homes is good work and is highly beneficial for the education of special classes who in no better way can be educated, most of whom, in fact, in no other way would be educated, and the education of parents always reacts favorably upon that of their children. Unfortunately funds for carrying on this form of education have not been sufficient for an extensive demonstration of its efficiency.

In its efforts to bring about a wider distribution of immigrants within the state, relieving thereby congestion and slum problems that result therefrom, the Commission of Immigration and Housing heartily favors whatever tends to improve the elementary schools of the country. The commission finds that the stranger comes here to improve the educational opportunities of his children. Observing that these opportunities are greater in the city than in the country, immigrants crowd into the populous centers and shun the rural districts. Moreover, our immigrant is a playfolk, and the country offers few opportunities for social intercourse. Immigration Leaflet No. 4 contains the following pertinent statements:

Union of school districts.

"Co-operating with the proper authorities, we propose doing our share toward bringing the country school up to the highest possible efficiency, to show how it may be used as a social and recreational center, for both child and adult. To this end, having received permission from the State Board of Education, this commission reprinted the working plan of a state educational bulletin entitled 'Union of School Districts.' "

The reprint has been widely distributed and not only gives public approval but directly lends assistance to measures advocated by your honorable board for increasing and improving elementary education by means of union schools. The commissioner highly appreciates the beneficial effect of this co-operation.

The attitude of the Commission of Immigration and Housing is one of earnest determination to initiate movements and encourage those already in process for the reduction of the percentage of illiteracy in the state. Since one of the objects of the public school system is to safeguard our children from the limitations of illiteracy, it is apparent that these activities of the Commission of Immigration and Housing are noted with interest and followed with great expectation by the Commissioner of Elementary Schools.

STATE BOARD OF HEALTH.

The State Board of Health issues a monthly bulletin. It is the purpose of those who have the publication in charge to carry one or two articles in each number which shall deal directly or indirectly with the public schools. Among others which have appeared during the past two years are the following:

Sanitation of the Rural School,
Rural Schools Need Attention—(Editorial),
The Value of a Day in School—(Editorial),
Rural Nursing in California,
Parental Supervision versus Medical School Inspection,
For Your Child,
Protect the Children,
That Cold,
Mental Health of Children,
Rural School Trustees Improve Sanitation—(Editorial),
Courses in Public Health Standardized.

Attention of teachers, parent-teacher associations, trustees and others interested has from time to time been called to these publications by the commissioner. They are intended to be practically helpful, and they are. A growing interest in them on the part of superintendents and teachers is noticeable. They serve to bring the schools and the State Board of Health into closer connection and to establish relations which can not fail to react favorably upon education.

Clean schools.

In his sound advice concerning cleanliness in the schools, Dr. Wilbur A. Sawyer, Secretary of the State Board of Health, makes a plea that ought to be understood, not only by experts in the field of sanitation, but by the plain man of the farm or the street. A plentiful and thoughtful use of soap and water on the surface of objects—floors, desks, doorknobs, etc.—is a far more powerful protection to health than is fumigation, he tells us.

It is therefore apparent that excellence of janitor service is a consideration of serious import. Too often it is the last and least consideration of boards of education and school trustees.

The commissioner has been using Dr. Sawyer's opinion as that of a state health officer in her endeavor to bring about better living conditions for teachers and children, and takes this opportunity to recognize and express appreciation, not only of co-operation, but of initiative in this commonly neglected matter of clean schools.

The county nurse.

In May, 1915, the State Board of Health made a temporary appointment and sent a county school nurse into Mendocino County for eight weeks. October 1, 1916, it is planned to send this rural nurse into other counties. The work of the county school nurse is reported under another heading.

Bulletin on sanitation.

Not only is the State Board of Health of assistance by means of its own activities, but it willingly lends a hand in furthering the projects of the State Board of Education; for example, as stated above, Mr. C. G. Gillespie, C. E., Director of the Bureau of Sanitary Engineering, State Board of Health, has recently, at the request of the commissioner, prepared with her assistance a bulletin for the use of rural communities, especially for the use of superintendents, teachers, and school trustees, on "Disposal of Sewage in Rural Districts." This bulletin is fully illustrated and will undoubtedly be widely and profitably read. It is most encouraging to be given the support of a state department, the work of which so closely touches that of education.

THE STATE LIBRARY.

The California schools are fortunate in having a state library that has interested itself in and developed a plan for complete library service to the state. In carrying out these plans it is doing much for the cause of elementary education. In its efforts to establish in every county in the state a county free library and to encourage the affiliation of the school district libraries with this county library, as provided for under section 1715 of the Political Code, it is increasing immensely the book privileges, not only of adults in communities, but also of the children in the elementary schools. There are now 30 county free libraries in operation, and the state library is still sending out its organizers to the end that eventually all counties in the state shall have this service. The state library also sends out a school library organizer to assist the county superintendents of schools and the county librarians in explaining what the advantages of the free library service are and how the school districts may take advantage of it. It is obvious that this activity on the part of the state library is of great value to schools, as co-operation with the county free library is rapidly solving all the problems of library service for teachers and for pupils.

That the schools are profiting by these efforts made in their behalf is illustrated by the following figures showing the progress during the last two years made in library service to the state:

County Free Libraries.

	July 1, 1914	July 1, 1916
Established	26	35
In operation	22	30
Annual income	$244,967 98	$481,751 55
Books, etc.	174,241	527,242
Branches	752	1,893
School districts that have joined	183	728

The library service as it is being conducted in California is a vital, co-ordinate part of education. These few figures show that the progress which the plan has made within the last two years has been steady. Compared with that of other states, it has been extraordinary.

Union schools.

The state library has also been helpful in furthering for its own purposes a movement advanced by the State Board of Education. In order that the affiliated school libraries may receive the best service possible, and that branch libraries may find place in accessible centers, the state library is co-operating with the State Board of Education in setting forth the advantages to be derived from union schools by means of union of school districts, as provided for in section 1674 of the Political Code. Each county librarian is kept informed of all the facts gathered by the commissioner concerning these unions in order that she may be a source of knowledge and suggestion to citizens regarding their educational, social and economic advantages.

STATE BOARD OF FORESTRY.

In a bulletin issued in 1915 entitled, "A Handbook of Forest Protection," by the State Board of Forestry, is an article addressed to teachers, calling their attention forcefully to the value of impressing upon their pupils the importance of protecting the forests and asking them to instruct the children regarding carelessness in building fires in or near forests.

Children often heed advice that comes to them with the authority of a distant state office which they do not so readily attend to when given by a teacher whom they see and hear every day. This article discussed with the children by teachers has had its good effect. It is not an effect which can be put into figures, but nevertheless teachers well understand its value.

Another bulletin on trees.

In addition to this service the forestry department has in preparation a bulletin which will deal with all trees native to California suitable for ornamental purposes, together with species introduced from other parts of the world which have proved valuable for shade and decorative planting in any part of the state. This bulletin, distributed free, will be of much worth to rural communities with their highways and schools as well as to those interested in city street and park planting. There is a growing interest in improvement of school surroundings. It is the aim of some of the county superintendents in the state to make of every school ground "a beauty spot." Surely such a publication as this one planned by the State Board of Forestry will be received with interest and used to advantage.

COLLEGE OF AGRICULTURE OF THE UNIVERSITY OF CALIFORNIA.

The College of Agriculture of the state university is peculiarly fitted to be of help to the elementary schools, not only through its extension work for adults which is obviously indirectly of value but because of help which is now made possible by means of the Smith-Lever fund. California received from this fund, in 1915, $32,054.00 which was disbursed by the state leader, the head of the College of Agriculture of the state university.

Partially supported by the Smith-Lever fund, fourteen counties of the state employ farm advisers. Certain of these advisers have been directly helpful to the county superintendents and the more progressive trustees in raising the standards of rural schools. They have also taken an interest in school gardens and home gardens which the elementary boys and girls, encouraged by their teachers and the superintendent, are attempting to cultivate. This service is valuable and is greatly appreciated, but being voluntary, is often irregular, and it is not far-reaching.

One hundred and seven high schools in the state, aided by the Smith-Lever fund, form among their students boys' agricultural clubs which have been unusually successful. There are 1,157 boys growing crops under the direction of the state university. In 1915, 8,270 of the boys who enrolled in the contests successfully completed them and passed in reports of their work.

Up to the present time, however, nothing of note has been done for the boys and girls of elementary school age, though in most other states of the country the younger children also are sharers in the benefits of this fund; they are members of agricultural clubs or of home economics clubs and are provided with instructors and supervisors as are boys and girls of more advanced age. The plan in California is unique. It may be described as the "Big Brother Plan." It aims to form leaders among the older boys who will be interested in and who will further the projects of the elementary children by helping to start them and by aiding the appointed supervisor and the farm adviser in seeing that they are carried through to the end. The Commissioner of Elementary Schools is convinced that this agricultural club work is highly important for both boys and girls and recommends that our local authorities in the counties (county superintendents and boards of supervisors) co-operate with the College of Agriculture of the state university, to the end that supervisors of agricultural club projects may be appointed who shall form clubs among the boys and girls of the elementary schools and who shall instruct and supervise these children in their efforts to carry through their projects.

Ornamentation of elementary school grounds.

No school grounds needing improvement need suffer from lack of instruction as to how to improve them. The Division of Landscape Gardening and Floriculture, College of Agriculture, offers to send to any principal, superintendent or board of education in California a collection of landscape plans for the improvement of school grounds, plans which are both suggestive and practical. The commissioner has given publicity to this generous offer through the columns of the Blue Bulletin.

In addition to this Professor J. W. Gregg of this same department has consented to write a bulletin on the "Ornamentation of Elementary School Grounds" which, written especially for the elementary schools, can not fail to be even more serviceable to them.

CALIFORNIA ASSOCIATION FOR THE STUDY AND PREVENTION OF TUBERCULOSIS.

Whatever differences of opinion may exist regarding medical examination of school children, the school nurse in cities is recognized as directly and indirectly beneficial. She is a link between home and school and often is more helpful than the truant officer in accounting for the absence of children from school.

The county nurse.

The county nurse, who serves the homes and the school children of the small towns and rural districts in somewhat the same manner as the city nurse serves urban communities, is in California an innovation. A few of the smaller towns and communities support nurses provided for by private funds and the expenses of a county nurse for the poor of San Mateo County were met, for seven years, by Mrs. Whitelaw Reid, but the first county school nurse was installed in Placer County, January 1, 1915, under the direction of the California Association for the Study and Prevention of Tuberculosis. A bequest of the late Mr. Dohrmann of San Francisco provided the necessary funds for this service. This nurse during the period from January 1st to May 1st visited forty-one of the fifty-four schools in Placer County and examined 2,067 pupils. Of these only 453 were found to be free from defects. In addition to the examination of the school children, she visited many of their homes, made public addresses in which she preached the doctrine of cleanliness, fresh air, sunshine, proper exercise and nourishing food and was instrumental in improving not only the general living conditions of whole communities, but the teeth, eyesight, hearing, breathing, etc., of children needing special attention.

In May, 1915, the State Board of Health made a temporary appointment for two months and sent this nurse into Mendocino County. Here 1,485 school children were examined, of whom 276 were found without defects. The same sort of inspection, visiting and suggestion were continued in this county with approximately the same results.

In September, 1916, a county nurse, under the direction of the California Association for the Study and Prevention of Tuberculosis, will begin work in Monterey County and later will be transferred to Ventura County. (The State Board of Health will also have a rural nurse, available October 1st.)

Submission to inspection is not compulsory. The nurse is sent into the county and is available for use for a certain length of time, but no district is obliged to accept her services. There appears to be a general desire, however, on the part of county superintendents, trustees, parents and teachers for the benefits offered. Already nine counties have requested the services of the rural nurse who is to begin work October 1st.

The experiment is proving valuable; it is hoped that money may be obtained in sufficient amount to enable every county in the state to test its efficiency.

In rendering a special service that no other school officer can so well render by promoting ideas of right living and suggesting the procedure for the correction of defects too often caused through wrong living, the commissioner feels that the county nurse is a contribution to the school force of no small importance for elementary education in rural and semirural communities, and has heartily welcomed and endorsed this aid offered by the California Association for the Study and Prevention of Tuberculosis.

CALIFORNIA FEDERATION OF WOMEN'S CLUBS.

The California Federation of Women's Clubs is an organization of 40,000 women. During the past year three departments of the federation, namely, the departments of Education, of Social and Industrial Conditions and of Country Life, centered their activities on improvement of rural conditions throughout the state and chose a special helper who was called Commissioner of Rural Schools to work with them. They selected as their chief objects of attention union or consolidated schools, civic centers, evening schools and teacherages or teachers' cottages. The Commissioner of Rural Schools prepared an outline setting forth the advantages of the union school. This was printed in the "Clubwoman," the official organ of the California Federation of Women's Clubs. So much that was directly serviceable for elementary education was contained in this outline that it was reprinted by permission by the State Board of Education and has been widely and advantageously distributed by the commissioner. Many other illustrations of valuable service to the elementary schools could be cited. This one is sufficient to show the character of activity displayed by this large and alert body of women and its helpful effect as an educational force.

CALIFORNIA CONGRESS OF MOTHERS.

The Congress of Mothers and Parent-Teacher Association, as its name indicates, is directly committed to education. Its enrollment is not so large as that of the California Federation of Women's Clubs but it, too, is a strong and growing organization, having this year about 18,000 members.

The commissioner, in going about the state, notes that schools in which parent-teacher associations are operative are relatively more progressive and efficient than those which do not receive such help. Especially valuable are they when certain of their meetings are held in the evening and are attended by men as well as by women. In some clubs the chief offices are held by men.

Because the schools and the homes must work together if children are to be wisely educated, and because the parent-teacher associations are endeavoring to bring about this unity of action, the formation of these clubs in connection with the schools is not only advocated, but is urged by the commissioner as a matter of high importance to the progress of elementary education.

DAUGHTERS OF THE AMERICAN REVOLUTION.

Good citizenship, patriotism and respect for the Flag are educational aims which have engaged the attention and received the aid of the Daughters of the American Revolution. This organization has not only expressed its interest in words, but has shown it in the presentation to the schools of national flags to be used in teaching lessons of loyalty. Once more we have an illustration of a valuable agency heartily co-operating with public school officers for the benefit of children.

LETTER OF TRANSMITTAL.

Sacramento, California,
September 14, 1916.

The Honorable State Board of Education,
Sacramento, California.

Ladies and Gentlemen:

In accordance with the provisions of section 1519 of the Political Code of California, I submit herewith the second and third annual reports of the Commissioner of Secondary Schools. As required by resolution of your honorable board, I have combined the report for the year ending June 30, 1915, with the report for the year ending June 30, 1916.

Very respectfully yours

WILL C. WOOD,
Commissioner of Secondary Schools.

BIENNIAL REPORT OF COMMISSIONER OF SECONDARY SCHOOLS.

The duties of the Commissioner of Secondary Schools are defined in section 1520 of the Political Code as follows:

> "The commissioner of secondary schools shall visit and investigate the secondary day and evening schools of the several counties of the state. He may recommend changes in the courses of study and shall investigate all contracts with textbook companies and see that they comply with the law, and shall perform such other duties as may be assigned by the superintendent of public instruction, under the direction of the state board of education."

In section 1752 of the Political Code it is provided that "the commissioner of secondary schools shall be ex officio chairman of each (high school principals') convention and shall have charge of the program thereof."

For the purpose of this report, the duties are segregated as follows:

(1) Visits, conferences and addresses.
(2) Investigations.
(3) Recommendations concerning courses of study.
(4) Enforcement of high school textbook law.
(5) Duties as chairman of the convention of high school principals.
(6) Other official activities.

VISITS, CONFERENCES AND ADDRESSES.

The Commissioner's activities in discharging the duty of visiting schools may be summarized as follows:

Number of teachers' and trustees' institutes attended	28
Number of addresses given at institutes	55
Number of high school commencement addresses given	24
Number of teachers' conventions attended	11
Number of addresses given at teachers' conventions	19
Number of visits to high schools	113
Number of visits to state normal schools	9
Number of visits to universities and colleges	14
Number of visits to other schools	16
Number of addresses given at mass meetings and club meetings	52

Conferences have been held practically every day with superintendents, principals, high school trustees, university professors, normal school presidents, principals of private schools and others interested in secondary education.

INVESTIGATIONS.

Among the more important investigations made by this office were the following:

(1) An investigation of the teaching of stenography in the various high schools of the state, the various systems taught, the number of

schools teaching each system and the number of pupils studying each system.

(2) An investigation of the organization of "junior college" departments in the high schools of California. (See page 159.)

(3) An investigation of the salaries paid to principals of high schools, and minimum and maximum salaries paid to high school teachers.

(4) An investigation of the tenure of teachers and principals of high schools enrolling less than fifty pupils. (See page 180.)

(5) An investigation of the rate of tax for high school purposes levied in each high school district in which less than fifty pupils are enrolled.

(6) An investigation of the cost of maintenance in the various high school districts of the state during the year ending June 30, 1914, the taxes levied for high school purposes, the assessed valuation of the various high school districts and the probable effect of the county high school fund bill (section 1764 of the Political Code) on high school district tax rates.

This investigation covered a period of two months and information concerning the effect of the bill on their districts or counties was sent to the members of the senate and assembly and to the various county superintendents.

(7) Preparation of a digest of the provisions of various city charters of California concerning the organization of the department of education in these cities.

(8) Preparation of a digest of the laws of the various states relating to the making of courses of study for high schools, or the approval thereof by the State Board of Education. This investigation was made at the request of members of the legislature.

(9) An investigation showing the effect of the abolition of the poll tax on revenues of the common schools of each county and a study of revenues and expenditures for school purposes in other states.

(10) Preparation of a digest of opinions of leading educators of the state concerning proper standards for special certificates of secondary grade.

(11) An investigation of the problem of furnishing textbooks free to the pupils of the high schools of the state, the advisability of adopting a uniform series of textbooks for high schools and publishing this series of textbooks at the state printing office. The results of this investigation were presented to the special committee of the legislature appointed to investigate this problem.

(12) An investigation of the enrollment, qualifications of teachers and courses of study in intermediate schools. (See page 166.)

(13) An investigation of the organization, management and use of high school libraries in California. (See page 175.)

(14) An investigation of expenditures by each high school district during each of the two years covered by this report, the cost per pupil for maintenance, the tax rate for high school purposes and the effect of the county high school fund bill on high school tax rates. (See pages 191–196.)

(15) Preparation from original sources of a history of school revenues and expenditures in California since 1850. The results of this investigation are given in about 100 pages of typewritten matter and will soon be ready for publication.

(16) An investigation of the problem of supervised study and the various plans of supervision of study in California high schools. (See page 174.)

RECOMMENDATIONS CONCERNING COURSES OF STUDY.

This office has made an investigation of courses of study in the various high schools of California, the number of courses offered in each school, the number of pupils taught in each course, requirements for graduation and principles underlying the organization of high school courses of study. (See page 154.)

ENFORCEMENT OF HIGH SCHOOL TEXTBOOK LAW.

During the period covered in this report, the law relating to the adoption and use of high school textbooks has been consistently enforced.

In accordance with section 1743*a* of the Political Code enacted at the last session of the legislature, the Commissioner has required of each high school principal a full and complete report of textbooks in use during the month of October of each year. These reports have been checked with previous reports and the Commissioner is pleased to state that few cases of violation of the law have been noted. An investigation of these cases has, in each instance, revealed a misunderstanding of the law rather than an intention to disobey it.

This office has also required of the clerk of each high school board a certified list of textbooks adopted by the board during the previous year. This list is compared with the list submitted by the principal and any discrepancy is investigated.

In accordance with the provisions of section 1750 of the Political Code the official list of high school textbooks prescribed by the State Board of Education has been prepared and published at the beginning of each year. It should be noted that whereas the official list in force at the time the present State Board of Education assumed office contained 1196 titles, the official list for 1915–16 contains only 369 titles in 63 different subjects, an average of less than six for each subject. The list has been reduced by striking therefrom any book not used in at least five high schools after it has been listed for a period of two years.

In 1915-1916 expert readers upon whose recommendation new books are listed were as follows:

List of Expert Readers, 1915-1916.

English: Fannie W. McLean, Berkeley High School; A. J. Cloud, deputy superintendent of schools, San Francisco.

History—Civics—Economics: J. R. Sutton, Oakland High School; John Nowell, Fresno High School.

Biology—Physiology: Chas. S. Morris, Palo Alto High School; Elizabeth D. Palmer, Los Angeles High School.

German: Elsie Wartenweiler, Berkeley High School; Laura Freidrich, Pomona High School.

French: Josephine Ginaca, Los Angeles High School; Emma Garretson, Alameda High School.

Commercial Subjects: B. F. Allison, Technical High School, Oakland; E. W. Barnhart, High School, Berkeley.

Mathematics: A. C. Olney, superintendent of schools, Santa Barbara; E. E. Brownell, Gilroy High School.

Physics—Chemistry: W. H. Williams, Fremont High School, Oakland; Anthony Rose, Modoc Union High School, Alturas.

Latin—Greek: Kate Herrick, Sacramento High School; F. O. Mower, Madera High School.

Spanish: Ruth Henry, State Normal School, Los Angeles; Marie Lopez, Los Angeles High School.

Physical Geography—Geology—Astronomy: Abner Downey, Selma High School; C. K. Studley, State Normal School, Chico.

Agriculture: J. B. Corcoran, High School, Wasco; H. F. Tout, High School, Visalia.

Music: Gertrude B. Parsons, Polytechnic High School, Los Angeles; Mary F. McDermott, supervisor of music, Alameda.

Domestic Science—Household Arts: Louise K. Willett, Sacramento High School; Maud Murchie, State Normal School, San Jose.

Manual Training—Technical and Industrial Arts: Elmer H. Whittaker, High School, Santa Barbara; Frank K. Barthel, supervisor manual training, San Francisco.

OTHER OFFICIAL ACTIVITIES.

Among the more important official activities other than those noted above are the following:

(1) Preparation and publication of a digest of all bills relating to schools introduced at the session of the legislature in 1915.

(2) Preparation and publication of forms for the Principals' October Report, and Clerks' Report of Textbook Adoptions.

(3) Preparation of a statement of progress in secondary education in California in 1914-1915, for the United States Bureau of Education.

(4) Conferences with Mr. Arthur P. Will, chief of the Legislative Counsel Bureau, concerning the proposed codification of the school law.

(5) Preparation of contracts with publishers for the lease of plates of books adopted for use in the elementary schools.

(6) Investigation of the merits of textbooks in elementary history of the United States, submitted by publishers in response to a call for bids published by the State Board of Education.

(7) Preparation of suggestions for the revision of Mace's "Beginners History of the United States" adopted for use in the elementary schools.

(8) Investigation of the merits of manuscripts in California history submitted for adoption, editing the manuscript submitted by Percy F. Valentine, and supervising the publication thereof.

(9) Co-operation with the Committees on Education in senate and assembly in considering the merits of bills relating to education.

(10) Conduct of one examination each year for the State Board High School Credential and supervision of the preparation of questions and the grading of papers.

(11) Publication of the following bulletins:

Bulletin 6—Descriptive List of Text and Reference Books in Physics and Chemistry (out of print).
Bulletin 7—Co-operation in the Teaching of English.
Bulletin 8—Oral English in the High School.
Bulletin 9—New Laws Relating to High and Intermediate Schools.

THE FIRST ANNUAL CONVENTION OF HIGH SCHOOL PRINCIPALS.

Representatives present.

The first annual convention of high school principals was held at Fresno, December 20, 21 and 22, 1916, in accordance with a call issued by the State Board of Education as provided in section 1752 of the Political Code. Practically all of the principals of California high schools were present. Representatives were present also from the departments of education at the University of California, Leland Stanford Junior University and Pomona College. The principals of several private secondary schools and a considerable number of vice principals and teachers in the public high schools were in attendance.

Spirit of the convention; Publication of proceedings.

In several respects, the convention was remarkable. It was stated generally by those present that it was the most earnest convention they had ever attended. Every speaker was carefully prepared and presented his topic with intelligence growing out of thorough investigation. It is a matter of regret that all of the papers presented could not be published in a volume of proceedings and distributed among the high schools of the state. It was impossible to grasp all that was said during the convention, although every address was worthy of careful study. The Commissioner therefore recommends that the State Board of Education make provision in its estimate of expenses for the publication of one thousand copies of the proceedings of each convention. The cost thereof would not exceed $150 each year but the effect on the work of the high schools would be worth many times that amount.

Recommendations of the convention.

The chief recommendations of the principals' convention were as follows:

(1) That the State Board of Education maintain the policy of holding one state convention rather than four district conventions of high school principals.

(2) That the school laws of the state be codified.

(3) That legislation be enacted making all high school certificates granted to inexperienced candidates probationary for the first two years of service.

(4) That the University of California be petitioned to establish a higher professional degree in education.

(5) That a practice school for teachers-in-training be established by the University of California.

(6) That high school library funds be expended by high school boards directly in building up high school libraries.

(7) That a plan of visual education for the entire state be provided.

The convention also indorsed the Smith-Hughes bill pending in congress, which provides federal aid for vocational education.

It expressed unqualified opposition to the plan of adopting a uniform series of textbooks for high schools of the state.

In a vigorously worded resolution, the convention condemned high school fraternities and called upon school administrators and all law-abiding citizens to aid in the suppression of these unlawful organizations.

FREE TEXTBOOKS FOR HIGH SCHOOL PUPILS.

The special committee appointed by the legislature for the investigation of the advisability of furnishing high school textbooks free and the feasibility of adopting a uniform series of textbooks for the high schools of the state to be published at the state printing office, will make its report at the coming session of the legislature. The report of this committee will undoubtedly contain much information, as well as certain definite recommendations.

However, the issues involved are so vital to education that the Commissioner feels the necessity of presenting the views he holds concerning some of these matters.

Free textbooks recommended.

The growth of enrollment in the high schools of the state during recent years indicates that the people of California regard the high school as an integral and indispensable division of the system of common schools. Approximately 90 per cent of the graduates from the elementary schools enter the high schools and an increasing proportion of pupils remain to finish the high school course. The logic of the situation demands that the principle of free textbooks now recognized in the elementary schools be extended to the high schools of the state. The Commissioner therefore recommends the enactment of necessary legislative measures for providing textbooks free to the pupils of all high schools in California.

Shall books be furnished by the district or the state?

In furnishing textbooks free to pupils in the elementary schools, the state has already assumed a heavy financial burden. The amount expended by the state for elementary school books during the year ending June 30, 1916, was $105,444.85. There are many who doubt the advisability of relieving the school district from all financial responsibility for furnishing textbooks to its pupils. Since the state has been generous in providing textbooks free for pupils of the elementary school, it is most reasonable that the district, rather than the state, should bear the expense of free textbooks for pupils of the high school.

Cost of textbooks under the proposed plan.

If textbooks are furnished free to the pupils by the districts each high school board will be able to avail itself of the 40 per cent discount generally allowed by publishers where books formerly used are offered in exchange, and the 25 per cent discount generally allowed on books for which no exchange is offered. Conservatively estimated the amount saved to the people of California annually through discounts would be $60,000. Under a free textbook plan it is probable that the total cost of textbooks for high school pupils will be approximately 50 per cent of the cost under the present plan.

Standardization and uniformity.

The plan of state uniformity of high school textbooks presents very serious objections from an educational viewpoint. Uniformity has been urged on the ground that standardization of textbooks is needed. The advocates of uniformity cite the successful application of the principle of standardization in business offices, factories, the trades and the transportation service, as indicative of the high value of standardization in educational processes. However, an analysis of their position reveals many fallacies.

The advocates of state uniformity of textbooks fail to recognize a distinction between uniformity and standardization. The terms are by no means synonymous. For example, if a factory standardizes its bolts, it does not necessarily make all bolts of the same size or shape or of the same kind of metal. If a business office standardizes its letters, it does not send out the same form to all inquirers. Standardization does not reduce all products to an absolute sameness as to form or substance. It will be seen, then, that the aim in standardization is not, and in the nature of things can not be absolute uniformity.

Limits of standardization.

In applying the principle of standardization, efficiency experts recognize certain definite limits. For the most part, the principle of standardization is applied to *lifeless* things—to freight cars, engines, automobile tires, bolts, rivets, etc. Whenever the principle is applied to a living thing the application is not made until the thing has reached the limit of growth. Oranges are not standardized until they are ripe and hams are not standardized until the swine have been killed. It is very difficult to apply the principle of standardization to any growing thing without injury.

The high school a growing institution.

The advocates of rigid standardization must therefore assume that the high school is a mature institution. A study of its growth in California since 1900 shows that they are wrong in this assumption. In number of pupils, the high schools of the state are growing by leaps and bounds. In subjects offered, courses of study are changing rapidly to meet current social demands. The high schools are offering three times as many courses as were offered in 1900. In the number of pupils electing the various courses, there have been great changes in recent years. Fewer pupils in proportion to the total enrollment elect Latin, mathematics and some of the modern languages for example. In the selection and organization of subject matter in textbooks changes and improvements are constantly being made. In methods of approach in many of the subjects there have been almost revolutionary changes and these changes are still in progress. All of these adjustments have been made in response to a persistent popular demand that high school education must be made more efficient. It will be seen then that the high school is a living, growing, adjusting organism, not a mature institution. Since it is living, growing and adjusting itself, the high school can not be rigidly standardized without working injury to the institution, to its pupils and to society which it serves.

Selection of teacher and textbook a local problem.

The textbook and the teacher are two of the most important agencies for acquainting the pupil with the world's knowledge and experience. They determine very largely what and how the pupil shall learn in the high school. We have standardized the qualifications of teachers, but it must be observed that teachers are not uniform, nor is it desirable that they should be. Experience demonstrates clearly that a teacher who fits in one school or community may not fit in another school or community. She may not have the knowledge or experience or method of approach to the subject that the school needs and demands. In the textbook situation the same principle applies. A textbook is merely a body of knowledge written by a teacher who reflects his personality in his book and employs a certain method of approach. The same principle under which a community is permitted to select high school teachers adapted to that community applies in the selection of high school textbooks. The people of a community have the right, within reasonable limits, to determine what knowledge shall be taught in their high school and what method of approach shall be adopted. State uniformity of high school textbooks would deny the community the right to adapt the school to local conditions and needs. The Commissioner is strongly of the opinion, therefore, that the principle of state uniformity should not be embodied in the measure providing free textbooks for the pupils of the high schools. He believes that the present law providing that the districts must adopt high school textbooks from a standard list prescribed by the State Board of Education meets every reasonable need for standardization.

THE TRAINING OF HIGH SCHOOL TEACHERS.

The standard for the high school certificate established by the State Board of Education in accordance with law is graduation from a four-year college course preceded by a four-year high school course, and a year of advanced study subsequent to graduation from college. During his undergraduate and postgraduate courses the candidate must complete fifteen units of work in the Department of Education including certain prescribed courses. However, a candidate who has had twenty months of successful experience in teaching may substitute such experience for half of the postgraduate requirement including all the work in education.

Certain graduate schools in the United States are authorized by the State Board of Education to issue credentials which may be recognized for high school certification in California, but all candidates for such credentials must meet all the requirements outlined above. All credentials issued by institutions outside the state must be approved by the Commissioner of Secondary Schools.

During the biennial period covered by this report no change in the list of accredited graduate schools has been made.

Credentials issued.

The following table shows the number of high school credentials issued by the State Board of Education and accredited graduate schools during the biennial period:

Agency issuing credential	Number issued	
	1914-1915	1915-1916
State Board of Education	180	244
University of California	217	236
Leland Stanford Junior University	77	89
University of Southern California	91	112
Institutions outside the state	*50	*50
Totals	615	731

*Estimated.

University training high school.

In his report for 1914 the Commissioner pointed out the need for better facilities for practice teaching in institutions in this state authorized to recommend candidates for the high school certificate. A bill providing for the organization of a training high school at the University of California was introduced at the last session of the legislature but it failed of passage. Fortunately the university was able to establish co-operative relations with the Board of Education of the city of Oakland.

In 1914 the Board of Education of Oakland placed the old Emerson School building at the disposal of the university and organized an intermediate and high school for the purpose of providing practice teaching facilities for prospective high school teachers, agreeing to bear a reasonable part of the cost of maintenance. The school enrollment includes pupils from Oakland and Berkeley. An excellent faculty was selected and Professor C. E. Rugh was assigned to direct the school. In the year following Mr. Herbert Lee was employed as principal.

The University High School is a model six-year high school, the work beginning with the seventh year. In 1915–1916 the number of pupils enrolled in the ninth, tenth and eleventh years was 169. The enrollment in the seventh and eighth years was 150. Practice teaching opportunities are provided for 150 students in education at the university, consequently there are few prospective teachers doing their practice teaching in other schools.

The establishment of the University High School has already resulted in advancing the standards of teaching in the state. The continuance of the school is essential if the high schools are to have properly equipped beginners in teaching. In the near future, the state should make ample provision for maintenance and should build and equip a suitable building for a model training high school.

Practice teaching facilities at Stanford University.

At Stanford University the outlook for better practice teaching facilities is very favorable. On June 19, 1916, a union of Palo Alto, Mayfield and Stanford districts was formed for the maintenance of a high school. Through the generosity of the trustees of Stanford University, a site of twenty or thirty acres adjoining the university campus has been provided at a rental of one dollar per annum for 99 years, and the new high school building will probably be erected on this site.

Although no definite arrangement regarding practice teaching has been worked out the Commissioner is very hopeful that the university and high school, cooperating in ways that will be mutually helpful, will arrange for practice teaching in the new school which will be near the university.

Practice teaching facilities at University of Southern California.

At the University of Southern California the academy is available for practice teaching. This arrangement seems to be very satisfactory to the university authorities.

The School of Education.

In 1914 the School of Education was organized at the University of California. In organizing this school the state university has placed the profession of teaching on the same basis as the professions of law and medicine. The purposes of the school are (1) to offer courses of professional training for candidates for the high school certificate; (2) to offer advanced courses for school administrators and supervisors; (3) to encourage advanced research in education; and (4) to afford students who do not look forward to teaching, opportunity for becoming acquainted with educational theories and problems.

The Board of Regents of the University of California has also authorized the conferring of a higher degree for advanced research in education. It is the purpose of the School of Education to interest the teacher in the scientific investigation of special educational problems of his community, as well as general educational problems. Community surveys will be encouraged. In fact, the School of Education has opportunity to assume a relation to the educational interests of California similar to that of the College of Agriculture to the agricultural interests of the state. The influence of the school is already felt in the California school system.

The Department of Education at Stanford University has also shown a fine spirit in co-operating with the Commissioner and the State Board of Education. The research work of this department, touching elementary as well as secondary school problems, has been enlightening and helpful. Some of this work has attracted nation-wide notice. California has reason to be proud of the work of the faculty in education in each of its accredited graduate schools.

PROBLEMS OF THE COURSE OF STUDY.

The situation in California.

No problem of high school administration is more important than that of curriculum construction. Notwithstanding its importance this problem has been crowded into the background by other problems attendant upon the remarkable growth of high schools during the last twenty-five years. An analysis of the courses of study submitted to the State Board of Education for approval shows that there are few, if any, principles of curriculum construction generally accepted by those who make the courses of study for California high schools. A few high schools still cling to the single rigid curriculum. For the most part these schools have a small enrollment. Many high schools report an elective system that is practically unlimited. Most of the high schools, however, are making serious efforts to arrange courses of study on the basis of the needs and interests of pupil-groups.

Need for more definite requirements.

Signs multiply that both the "single-track" curriculum and the "trackless" or purely elective system, have had their day. High school administrators are coming to realize that while the modern curriculum must make allowance for the varying needs, interests and futures of pupils, it must be so constructed that whichever course the pupil may elect, he will find therein an arrangement of studies that is purposeful and of genuine educational value. A diploma of graduation from high school must be a guarantee of something other than the fact that the pupil has spent four years in high school and made a passing mark in fifteen or sixteen units of work.

Suggestions for solution of problem.

In attempting to derive and formulate general principles which may be applied in the construction of curricula, the Commissioner of Secondary Schools realizes the danger of adding to the confusion by offering a ready-made plan. A problem of such great moment can not be solved by an utterance *ex cathedra*. In studying suggestions for the solution of the problem offered by the best educational authorities one is impressed with the lack of unanimity. The best solution of the problem will be found after careful investigation and full discussion by those who are concerned with curriculum construction. The Commissioner has therefore appointed a committee from the high school principals of the state to cooperate with him in the investigation, and this committee will report to the High School Principals' Convention.

Data concerning courses of study.

The following data concerning courses of study and enrollment therein has been compiled in the Commissioner's office:

	Number of schools
English—	
4-year course	230
3-year course	6
2-year course	6
1-year and special courses	18
Journalism	15
Oral English	33
Debate	29
Dramatics	14
Latin—	
4-year course	152
3-year course	11
2-year course	71
1-year course	1
Greek—	
3-year course	6
2-year course	4
French—	
4-year course	19
3-year course	10
2-year course	39
1-year course	3
German—	
4-year course	44
3-year course	20
2-year course	124
1-year course	3
Spanish—	
4-year course	28
3-year course	16
2-year course	96
1-year course	8
Mathematics—	
Elementary algebra	245
Plane geometry	245
Advanced algebra	221
Solid geometry	209
Trigonometry	197
Surveying	15
History—	
Ancient	223
Medieval and modern	215
American history and civics	257
English	135
General	15
Industrial	17
Economics	81
Sociology	6
Current	4
Pacific coast	1
Science—	
General	142
Physical geography	78
Chemistry	238
Physics	231
Physiology	35
Hygiene	15
Botany	80

	Number of schools
Science (continued)—	
Zoology	19
Household chemistry	23
Agricultural chemistry	6
Biology	52
Astronomy	2
Psychology	1
Domestic science—	
Cooking	192
Sewing	204
Millinery	31
Home economics	35
Nursing	11
Dietetics	7
Commercial—	
Bookkeeping	218
Shorthand	204
Typewriting	210
English	58
Spelling	97
Correspondence	39
Law	149
Geography	102
Arithmetic	192
History	16
Penmanship	144
Banking	7
Business practice	34
Advertising and salesmanship	4
Agriculture—	
General agriculture	73
Animal husbandry	28
Horticulture	30
Dairying	23
Gardening	13
Plant propagation	15
Soils	15
Farm management	9
Farm mechanics	16
Drawing—	
Freehand	193
Mechanical	143
Geometrical	54
Architectural	1
Painting	3
Arts and crafts	31
Clay modeling	7
Physical education	52
Manual training	185
Music	128
Assaying	4
Library training (vocational)	3
Electricity	10
Mineralogy and geology	2
Architecture	3
Printing and bookbinding	8
Auto mechanics	12

Data for 1915-1916. Included in investigation are courses of study in 260 high schools.

Table Showing Number of Pupils Enrolled in Various Courses, October 1, 1915.

	Number of pupils enrolled
English—	
Grammar	4,111
Composition-rhetoric	25,643
Myths	11,649
Heroic ballads	9,444
History of English literature	5,465
History of American literature	1,530
Oral English and debate	4,639
Oration and argument	3,381
English poetry	15,031
English prose	3,555
Dramatics	15
Journalism	68
Elocution	271
Latin—	
First year	8,493
Second year	5,016
Third year	1,081
Fourth year	715
Greek—	
First year	63
Second year	52
Third year	22
French—	
All classes	2,990
German—	
All classes	6,680
Spanish—	
All classes	10.844
History—	
Ancient	8,886
Medieval and modern	6,339
English	2,382
American	8,432
General	307
Industrial	420
Civics	5,250
Economics	1,579
Sociology	85
Current	22
Commercial—	
Bookkeeping	8,194
Shorthand	6,302
Commercial (continued)—	
Spelling	4,990
Law	1,374
Geography	799
Correspondence	3,663
Arithmetic	6,303
Accounting	425
Banking	292
Business practice	481
Penmanship	3,981
Typewriting	6,772
Salesmanship	85
Advertising	76
Music—	
All classes	4,915
History of art	480
Mathematics—	
Algebra (First Year)	17,208
Algebra (Advanced)	2,738
Geometry (Plane)	10.724
Geometry (Solid)	1,545
Trigonometry	1,032
Calculus	10
Higher arithmetic	164
Mechanics	186
Science—	
Physics	4,178
Chemistry	6,814
Physical geography	2.022
Biology	1,390
Zoology	385
Physiology	1,232
Botany	1,712
Mineralogy	11
Geology	125
Astronomy	85
General	3,501
Psychology	52
Domestic science	2,952
Household arts	1,588
Agriculture	1,289
Assaying and cyanide	10

Data compiled from principals' October reports for 1915.

Suggested basis of organization.

Without attempting to anticipate the report of the principals' committee, the Commissioner offers the following suggestions for discussion:

1. The minimum requirement for graduation from a California high school shall be sixteen units.

2. Eight units shall be prescribed in English, foreign languages, mathematics, history and economics and natural science, including a minimum of 2 units of English, 1 unit of American history and civics and 1 unit of science.

3. The remaining eight units shall be elective, but the pupil must so elect his studies that he will have a three-unit course in each of two departments and a two-unit course in at least one other department.

The possibilities of the plan are indicated in the following arrangement of minimum courses under the proposed plan:

Subject	Course I	Course II	Course III	Course IV	Course V	Course VI	Course VII	Course VIII	Course IX
English	2	2	2	2	2	2	3	4	4
Mathematics[1]	2	0	2	1	1	1	1	1	0
Foreign Language	2	2	0	2	2	0	2	0	2
History and Economics[2]	1	2	2	1	2	3	1	2	1
Natural Science[3]	1	2	2	2	1	2	1	1	1
Elective	8	8	8	8	8	8	8	8	8
Total	16	16	16	16	16	16	16	16	16

[1] In courses IV–IX, inclusive, work in commercial or household arithmetic may be accepted as meeting the requirement in mathematics.

[2] In all courses English (2 units), American History and Civics (1 unit) and Science (1 unit) shall be prescribed. In all courses except I. IV, VII, and IX economic geography may be offered for one unit of the requirement in history and economics.

[3] In course I the science offered must be a laboratory science taken in the third or fourth year.

THE JUNIOR COLLEGE.

Growth of the junior college.

During the biennial period the progress of the junior college in California has been very satisfactory. All of the junior colleges listed by the Commissioner of Secondary Schools in his report for the year ending June 30, 1914, with the single exception of Le Grande, show substantial growth. To this list should be added the following high schools which have established junior college departments: San Diego, Santa Ana, Pomona, Azusa, Chaffey Union (Ontario), San Luis Obispo, Riverside and Sacramento. Movements are under way having for their purpose the establishment of junior college departments at Shasta Union High School and Palo Alto High School.

Enrollment in junior colleges.

The following table shows the enrollment in the junior college departments of the various high schools for the year ending June 30, 1916:

Enrollment in Postgraduate Courses in California High Schools, 1915-1916.

High School	First year		Second year		Totals
	Men	Women	Men	Women	
Concord*		2			2
Fresno	49	38	14	6	107
Imperial	1	4	1	2	8
Bakersfield	14	5	3	1	23
Azusa	7	30			37
Long Beach	20	59			79
Hollywood	25	60	5	12	102
Los Angeles city	188	175	42	36	441
San Fernando	4	3			7
Pasadena	8	53			61
Le Grande*		1			1
Fullerton	12	15	10	7	44
Orange	4	3			7
Santa Ana	7	19			26
Lincoln*		3			3
Auburn	8	5	5	2	20
San Diego	29	44	4	7	84
Santa Barbara	15	15	6	11	47
Yreka	1	15	1		17
Orosi*	1	1			2
Totals	393	550	91	84	1,118

*No regularly organized junior college courses maintained.

Cost of instruction in junior colleges.

Unfortunately the cost of maintenance of the junior college is not segregated from the cost of maintenance of the high school itself. It is impossible, therefore, to secure exact data showing the cost of maintenance. Through the courtesy of various high school principals, however, approximate data has been secured. Principal Arthur Gould of San Diego has submitted the following table showing the cost per student per semester for instruction and equipment in the various classes of the junior college department of the San Diego High School:

Subject	Cost per student
Mathematics	$17 02
History	9 79
Economics	9 11
English	16 40
French	12 19
German	11 08
Chemistry	30 46

In speaking of the total cost per student, he says, ''It is very evident that the instruction per class is high priced, while in several classes the enrollment is quite small.''

Mr. Delbert Brunton, formerly principal of Fullerton Union High School, estimates the total cost of salaries and equipment in the junior college department at $5,970 per annum. Assuming an average daily attendance of fifty the cost per student would be approximately $120 per annum. The cost per pupil in the high school department during the preceding year was $235. He states that if the proportionate share of overhead expense be added to the cost of instruction and maintenance in the junior college department, the cost per student will not exceed the cost per pupil in the high school.

Assistant Superintendent Monlux of Los Angeles estimates the cost per student in the junior colleges of that city at $150. The cost per pupil in the high schools for the year 1914–15 was reported at $128.50.

Superintendent A. C. Olney of Santa Barbara reports as follows: ''For the first two years the cost was about $50 for each student. The cost per pupil in the regular high school was, last year, $91.34.''

Dr. John F. Engle of Placer Union High School at Auburn writes as follows:

''As to the cost per capita, I figure it in the following way: If a teacher is teaching five courses, two of which are in the junior college, I charge up two-fifths of this salary to the junior college. On this basis the entire amount of money now spent in our school for teaching junior college subjects is $3,345, which, divided by 20 (enrollment), equals $167.25. With the present teaching force we could easily handle 40 junior college students. This would make the per capita cost approximately $80. It is entirely safe to say that when the junior colleges are fully developed, the teaching cost per capita, barring the expense of installing laboratories, will not be a cent higher than the per capita cost for high school pupils.''

From the data supplied by the principals it would seem reasonable to conclude that the cost per student in the junior college is little if any greater than in the high school. It must be borne in mind, however, that the only courses offered at present are those ''approximating the first two years of college work.'' If vocational courses are offered, and it is desirable that they should be, the cost per student will undoubtedly be larger than the cost per pupil in the high school.

Cost of equipment.

The following estimate of the minimum cost of equipment in small junior colleges has been submitted by Dr. John F. Engle of Placer Union High School:

Course	Cost of equipment
Elementary analysis	nominal
Analytic geometry	nominal
Calculus	nominal
Western American history	$100– $200 (books)
Nineteenth century European history	100 (books)
First and second year college English	50– 150 (books)
Political economy	50– 100 (books)
First year college chemistry	500– 800 (laboratory)
Second year college chemistry	nothing additional
College physics	1,400– 2,000
Logic	50 (books)
Latin	20 (books)
French	20 (books)
German	20 (books)
Spanish	20 (books)
Psychology	25– 50 (books)

This estimate is based on the assumption that the library and laboratories have been well equipped previously for high school work.

Organization on the hour-recitation basis.

In an excellent bulletin on the junior college issued by the University of California, it is suggested that the junior colleges should organize recitations on a full hour basis. ''University experience shows that an hour is none too long for the proper development of the theme of lecture and recitation.'' Moreover, the change to the hour schedule ''begins the transition from the school attitude to the college attitude.''

Principal Engle of Placer Union High School reports that he has reorganized the entire school on the hour recitation basis. In his report Dr. Engle gives his estimate of the hour schedule as follows: ''The best scheme for grafting the junior college on the high school is the hour schedule, the one that goes along with the supervised study scheme. With the hour period, the high school can at once adopt supervised study and the junior college can immediately parallel the two-hour, three-hour and five-hour courses at the University. There are some practical difficulties in adjusting a schedule where the high school periods are only forty or forty-five minutes long so far as the junior college is concerned.''

The office of dean.

The organization and administration of the junior college involves much extra work for the principal. If the junior college department is to be successful it is essential that some member of the faculty be charged with immediate responsibility for its organization, and that this officer make a careful and critical study of the specific problems of the department. In the smaller junior colleges the principal may assume these duties but in the larger junior colleges it is desirable that a dean of the junior college be appointed. He should rank as a vice principal and should be responsible to the principal directly for the conduct of work in his department.

Present legal provision concerning the junior college.

The law under which junior college departments have been organized was approved in 1907. This law is somewhat vague and indefinite and there is need for amendment at the approaching session of the legislature. The law authorizes high school boards to establish postgraduate courses of study approximating the first two years of college work. It provides that graduates of the high school maintaining postgraduate courses and graduates of other high schools may be admitted to such courses. It also authorizes the high school board to charge tutition for pupils living without the district and attending such courses.

Financing the junior college.

It will be observed that no specific provision for maintenance is made in the law. Practically all of the districts which have established postgraduate courses have raised the expense of maintenance by district taxation. In 1915, the Attorney General gave an opinion that students enrolled in such courses can not be counted in making apportionments of the state high school fund. There seems to be some doubt also as to the legality of counting postgraduate students in estimating the amount of county high school fund required.

The time has arrived when the postgraduate or junior college department should be placed upon a more satisfactory financial basis. A more comprehensive law concerning the organization of postgraduate courses should be placed upon the statute books and this law should contain the provision that the average daily attendance of students enrolled in such courses shall be counted in estimating the amount of state and county high school revenues. Apportionments should be made on account of attendance on postgraduate courses in the same manner as apportionments are made on account of attendance on regular high school courses.

Provision should be made also that wherever students residing in a county where junior college privileges are not provided attend postgraduate courses maintained in a school of an adjoining county, the attendance of such pupils shall be reported to the county superintendent of schools of the county in which such students reside, and the county superintendent shall include in the estimate of county high school fund required an amount computed at $60 for each student so attending. This amount should be transferred to the credit of the school in which the students are enrolled. If such provision is made, the clause relating to the payment of tuition should be stricken out. The junior college is a part of our public school system and tuition therein should be free.

Limitation on organization.

In making provision for state and county contributions to the support of postgraduate or junior college courses, we should guard against the organization of such courses in districts which can not adequately support them. The first duty of a community in educational affairs is to provide adequately for the support of its elementary schools. Its next duty is to provide adequately for the support of its high school. Until the elementary and high schools are adequately provided for, a postgraduate or junior college course should not be established. The establishment of weak junior college departments will hinder the development of the junior college movement and will work injury to the elementary and high schools. After investigation, the Commissioner recommends that the law provide that a postgraduate course shall not be established in any high school district having an assessed valuation, exclusive of operative property, of less than $7,500,000. It should also be provided that no postgraduate course shall be established unless at least fifteen qualified students apply therefor. The law should contain a provision that whenever the average daily attendance in the postgraduate department for any school year is less than ten, the postgraduate department shall be suspended and shall not be re-established until at least fifteen postgraduate students petition for such re-establishment.

Course of study.

Under provisions of the law, the courses of study in the junior college department must approximate those offered in the first two years at the university. This limitation should be removed so that the junior college department may become a self-directing institution, free to adapt itself to community needs. It is well, perhaps, that the junior college department, in its infancy, was under college tutelage, but the time for limitation of the work of the junior college has passed. There is need in various communities in the state for postgraduate courses of a vocational nature, including courses designed to fit students for civic occupations as advocated by Dean Alexis F. Lange of the School of Education at the University of California. In certain communities the junior college may offer courses in higher commercial law, business management, accounting, banking and finance. There is need also for the introduction of the study of Spanish and of Spanish-American history, customs and institutions, with a view to fit young men for commerce and trade in Spanish-American countries. For such students the study of literary Spanish is of doubtful worth.

In certain communities the junior college should offer courses in practical engineering—civil, structural, mechanical and electrical. They should give courses in plane surveying, strength of materials, hydraulics, architecture and bridge design. In other communities, advanced practical courses in agriculture may be offered. It is essential, therefore, that the law shall be so drafted that courses other than those approximating the first two years at the university may be offered.

Admission—special students.

It is impossible under the present law to admit to postgraduate courses any student other than a high school graduate. This limitation on admission is a serious handicap. The universities have found it advisable to admit to college work special students who have not fulfilled all the requirements for admission. Scholarship standards would be endangered, of course, if the doors of the junior college were thrown wide open, but this is not necessary. The law may safely provide that candidates for admission who are at least twenty-one years of age and who shall satisfy the principal and county superintendent of schools that they possess requisite ability and preparation, may be admitted to junior college courses, subject to such limitations with respect to amount of work and election of studies as the faculty or high school board may prescribe. In courses paralleling the first two years of college work, for example, it may be necessary, in the interest of high standards of work, to limit the number of special students admitted to such classes.

Pre-university students and students-at-large.

For the establishing of proper scholarship standards, it is very desirable that graduates of high schools admitted to the junior college be classified as pre-university students and students-at-large. A pre-university student is one who has satisfied the matriculation requirements established by the University of California. A student-at-large is one who has not satisfied these requirements. Provision should be made, however, for making up matriculation credits while the student is pursuing college courses. Full matriculation should be necessary for students desiring to earn recommendation for credit at the university. However, the determination of the status of high school graduates entering the junior college should be a matter of school regulation, not a subject for legislation.

Graduates from postgraduate courses.

If the junior college is to attain full recognition as an educational institution, it is desirable that the requirements for graduation be standardized. A diploma from a California junior college should represent a minimum of higher educational work. While it would seem inadvisable to embody requirements for graduation in the law, provision may be made for the establishment of minimum requirements for graduation by the State Board of Education.

ORGANIZATION OF INTERMEDIATE SCHOOLS.

New law governing intermediate schools.

Although the intermediate school was established in California as early as 1909, it has only recently been given recognition in the laws of the state. The constitution of California provides for a distinct segregation of elementary and high school funds, so the problem of organizing the intermediate school, embracing two years of work formerly recognized as belonging to the elementary school, and one or two years of work recognized as belonging to the high school, was a difficult one to solve. However, the legislature of 1915 passed an act legalizing the organization of intermediate schools and removing, in a measure, the difficulty caused by the separation of elementary and high school funds. The intermediate schools are made a part of the secondary school system. A transfer of money from the elementary school fund to the secondary school fund to pay for the tuition of pupils enrolled in the first two years of the intermediate school course is provided for. The law also provides that a union high school district, by a majority vote of the qualified electors thereof, may organize intermediate school courses and admit thereto pupils who have completed the sixth grade.

Intermediate schools in rural communities.

Although several cities have reorganized their schools in accordance with the new law no union high school district has taken advantage of its provisions. The Commissioner believes that the intermediate school law offers to rural districts excellent opportunity for consolidating the upper grades of the grammar schools and introducing manual training, household arts, elementary agriculture and similar work. Since the high school board is authorized by law to provide transportation to and from the high school building for pupils residing at a distance, the problem of transportation may be easily solved. When the people of the more thickly populated union high school districts thoroughly understand the law providing for the organization of intermediate school courses and the educational advantages such courses offer, many such high school districts will undoubtedly introduce intermediate school courses.

Table Showing Enrollment in Intermediate School Courses (1915-1916).

(Including elementary schools offering one or more high school subjects in the seventh and eighth grades.)

City	Number of intermediate schools	Enrollment
Los Angeles[1]	9	18,640
Berkeley	6	2,276
Palo Alto	1	286
Oakland[2]	9	2,566
Pomona	4	541
Alameda[2]	4	721
Sacramento[3]	------------	1,974
Santa Monica[2]	2	353
Santa Rosa[1]	1	423
Santa Ana[2]	1	497
	37	28,277

[1] Enrollment given includes all pupils in city enrolled in seventh, eighth and ninth years of day schools.

[2] These schools embrace seventh and eighth years only. They are departmentally organized and offer one or more elective courses. In Oakland, however, two three-year intermediate schools are maintained.

[3] Sacramento has recently organized its entire system to include intermediate schools. Enrollment given includes all pupils enrolled last year in seventh, eighth and ninth years.

THE COURSE OF STUDY IN INTERMEDIATE SCHOOLS.

An analysis of the courses of study in the various intermediate schools reveals a remarkable similarity in their organization. In most intermediate schools the school day is divided into forty-minute periods. Fortunately the intermediate school has not adopted the plan generally accepted in California high schools whereby the pupil's course for any years is limited to four or five studies each of which must be taken five periods a week. The intermediate school recognizes in its course of study that one of its functions is to enable the pupil to discover himself and to this end it provides variety of work. In some quarters there is a tendency to regard the intermediate school as the high school pushed down to the beginning of the seventh year. An intermediate school organized in accordance with this notion is certain to fail. It is a mistake to teach Latin or English or any other subject in the intermediate school in the same way that the subject is taught in the high school. The content must be different, the methods must be different and the results must be different, because the pupils are different with respect to age, interest and capacity.

Significant changes in the course of study.

An analysis of the courses of study in the intermediate schools of California by the Commissioner of Secondary Schools was published in the Proceedings of the California High School Teachers' Association for 1914. Since the publication of the analysis, the most significant development in intermediate school courses is that of the Vocational intermediate school in Oakland. In this school the work of the seventh and eighth grades for girls includes the following: English, 5 periods; mathematics, 3 periods; history and geography (seventh year only), 4 periods; civics and hygiene (eighth year only), 4 periods; design, 4 periods; music, 2 periods; study of girls' vocations, 1 period; physical training, 1 period.

In addition to the subjects mentioned, seventh grade girls take cooking, 10 periods; dressmaking, 10 periods for first half year and millinery, 10 periods for second half year. Eighth grade girls take dressmaking or millinery for 20 or 25 periods.

In the ninth year the work for girls includes English, 5 periods; music, 2 periods; physical training, 2 periods; accounting, 3 periods; drawing and design, 4 periods; and trade work or home economics, 20 or 25 periods.

The course for seventh and eighth grade boys is as follows: English, including penmanship, spelling, grammar and composition, 5 periods; music, 2 periods; drawing, 4 periods; history-geography or civics-hygiene, 4 periods; arithmetic, 4 periods; physical training, 1 period; shop work, 20 or 25 periods.

In the ninth year the work for boys includes shop work, 20 or 25 periods; drawing, 4 periods; mathematics and science, 5 periods; English, 4 periods; physical training, 1 period; music, 2 periods; study and library, 4 periods.

The shopwork includes automobile construction and repair, blacksmithing, carpentry and cabinet making, electrical work, machine shopwork, printing. Machine drawing and architectural drawing are also given.

EVENING HIGH SCHOOLS.

The growth of evening high schools in California during the last two years has been remarkable. Formerly evening high schools were found only in the larger cities. The official reports of the county superintendents for the 1915–1916 show that evening high schools have been established in fourteen centers in California, several of which have a population of less than 10,000. This growth is due very largely to the growing disposition of boards of trustees to adjust the organization and courses of study of the high school to the needs of the community.

The county high school fund bill, enacted in 1915, has stimulated the organization of evening high schools in rural as well as in urban communities. The evening high school now receives from the state approximately $1,000 per annum on the school basis, and in addition thereto, $10 per pupil in average daily attendance. It receives from the county $125 per teacher (not exceeding four teachers), for each teacher actually employed in the evening high school, and in addition thereto approximately $50 per pupil in average daily attendance. The funds received from state and county are sufficient to pay all of the expenses of maintenance provided the average attendance in the evening high school exceeds twenty. In some instances the evening high school actually receives more money from state and county than is expended for the maintenance of the school. The Commissioner is therefore of the opinion that the law relating to the apportionment of the state high school fund should be so amended that the evening high school shall be considered a branch of the day high school.

The following table shows the enrollment and average daily attendance in the evening high schools of California in 1915–1916.

Table Showing Enrollment and Average Daily Attendance in Evening High Schools (1915-1916).

Name of school	Enrollment	Average daily attendance
Oakland High	1,206	113
Technical (Oakland)	93	6
Imperial	111	15
Los Angeles High	3,278	208
McKinley Avenue (Los Angeles)	1,216	100
Polytechnic (Los Angeles)	10,292	737
San Pedro (Los Angeles)	379	24
Wilmington (Los Angeles)	71	19
Pasadena	807	69
Pomona	590	38
Santa Monica	524	44
Venice	227	13
Sacramento	1,901	140
San Diego	1,917	218
Commercial (San Francisco)	1,504	195
Humboldt (San Francisco)	2,298	454
North Beach (San Francisco)	80	15
San Mateo	168	30
Gilroy	96	19
San Jose	646	266
Marysville	93	16
Totals	27,597	2,739

The Commissioner recommends that section 1619 of the Political Code be amended so as to eliminate the provision that all schools in a given district must be maintained for an equal length of time during the year, in so far as this section applies to evening schools. Since a large proportion of the enrollment in evening high schools is from the adult population of the community, the law should permit evening high schools to hold sessions two, three, four, five or six times a week, as the local board may determine. It is practically impossible for a school enrolling a large number of adults to insist upon attendance five evenings each week.

HIGH SCHOOL EXTENSION.

In a report of this kind it is impossible to chronicle all of the significant developments in secondary education in California. However, certain recent developments are particularly deserving of comment.

We are coming to realize that in many communities the work of the high school must extend beyond the four walls of the classroom if the school is to minister to the educational needs of all the young people who are genuinely desirous of obtaining a high school education. The high school must extend its work into the community, not only for the sake of offering opportunity to young people who can not attend the regular session, but also for the purpose of drawing strength and life from the community itself.

Among the more significant attempts at high school extension are the following:

Correspondence courses.

In 1914 the trustees of Calaveras High School, located at San Andreas, adopted a plan of correspondence instruction. Calaveras High School District embraces the greater part of Calaveras County. Many of the young people in the district reside forty or fifty miles from the county seat where the high school building is located. On investigation it was found that there were many young people, who, for financial or other reasons, could not conveniently attend the high school. It was to meet the needs of these young people that a plan of correspondence instruction was inaugurated.

The correspondence courses are open to all individuals regardless of age or previous educational qualifications, except those boys and girls who are now attending grammar school. Most of the subjects offered in the high school may be taken by correspondence. High school credit is given for all satisfactory work done and no charge for tuition is made. The success of the work is tested by examination given by one of the instructors in person.

Principal James Keith reports that the average number of pupils enrolled each year in correspondence courses is eighteen. The highest number enrolled at any time was thirty and the lowest eleven. He states that the plan has aroused the ambition of a goodly number of boys and girls, many of whom have attended the high school after completing some work by correspondence. He states also that the high school has been brought in touch with families living in remote districts and the plan has made the people better acquainted with the workings of the high school. As a means of extending high school advantages in some of the sparsely settled districts of California this plan is worthy of mention.

Summer high schools.

During the summer of 1916 the Los Angeles city department maintained summer courses in the Polytechnic and Los Angeles high school buildings. During previous summers courses have been maintained in other high school buildings. The purpose of these courses is to provide activities for the unoccupied time of city children, to enable pupils to make up back work, to strengthen the work of pupils who show weakness in any subject, and in some cases to enable ambitious pupils to take advanced work. The maximum enrollment during the summer was 1,959 pupils. The teachers were selected from the regular staff of teachers and the subjects given were those selected by the pupils themselves from the regular high school courses. No subject was offered unless the number of pupils electing it was sufficient to warrant the organization of a class. Mr. M. C. Bettinger, assistant superintendent, regards the summer high school session as most successful. He states that the summer high schools have "grasped the consciousness of the city," and believes that the public appreciates to the utmost the value of these summer sessions.

Boys' agricultural clubs.

During the last two years high school agricultural clubs organized by Mr. B. H. Crocheron of the University of California have made excellent progress. The first of these clubs was organized in 1913. In 1914–1915 there were 64 clubs, ranging from Arcata in Humboldt County to San Diego. Most of these clubs were located in the great interior valleys. There were 620 boys belonging to these clubs in 1914–1915 and the number enrolled in 1915–1916 was in excess of 1,000.

The boys' agricultural clubs are organized for the purpose of stimulating interest in farming and real appreciation of rural opportunities. The clubs are inspired by expert leaders and each member participates in club government. Each member is allowed to select a home project for the year. Some of the boys elect to raise pigs, others to plant an acre of potatoes or lima beans or popcorn. At the end of the season expert judges view the home projects and determine the success of each project. All of the successful boys assemble in October at the State University Farm at Davis where they become acquainted with some of the more scientific aspects of farming. Twenty-nine prize winners were accompanied by Mr. Crocheron on a trip across the continent for the purpose of visiting the best farm schools in the country and observing farming methods in other states. The work of the boys' agricultural clubs has been very successful. These clubs are giving the young people of rural districts a better outlook upon life and a better attitude toward community problems.

COOPERATION OF HOME AND SCHOOL.

In our larger high schools there is danger that the pupil will be lost in the maze of courses. The personal relation between pupil and pupil and between pupil and teacher in such schools is a problem worthy of careful study. In such schools it is quite desirable that at least two teachers, a man and a woman, be charged with the responsibility of looking after the affairs and activities of pupils. In some instances the teacher in charge of the affairs and activities of boys is designated ''dean of boys'' or ''boys' adviser,'' and the teacher in charge of the affairs of girls, ''dean of girls'' or ''girls' adviser.'' The adviser stands in a close personal relation to the pupils and must therefore have a personality commanding respect and inviting confidence. It is the business of the adviser to supervise the activities of the pupils and to assume considerable responsibility for the social aspects of high school work. Upon him rests the larger responsibility for making school activities serve educational and moral ends. It is his duty to stand for the best in high school life. The adviser is guardian of the moral welfare of the pupils assigned to him.

Miss May V. Haworth, girls' adviser in Alameda High School, states her conception of the aims of the adviser's office as follows: ''Mentally—to hold a high intellectual standard, to teach part time in order to keep in touch with class problems, to encourage honor societies and help in vocational guidance; morally—to stimulate the discussion of pertinent questions which will lead to good school spirit and set proper standards for personal conduct; physically—to encourage outdoor sports, athletics for all pupils and hygiene talks or courses.''

The adviser should personally interest himself in new pupils; should cooperate with parents, teachers and principal in stimulating good conduct, encouraging weak students and helping to follow up pupils who want to leave, or who have left school. The adviser has by nature of his position great opportunities by conferences and confidential talks to develop leaders and to bring out the shy or bashful pupils, to foster student-faculty co-operation, to stimulate work, play and service, and to emphasize character as the goal of education.

The Commissioner believes that in the larger high schools the work of the adviser is almost indispensable. He wishes to suggest, however, that the teacher assigned to this work be known as supervisor of boys' activities or supervisor of girls' activities. Strictly speaking the terms dean and adviser are applicable only to college officers.

HIGH SCHOOL CADETS.

High school cadet companies have been organized in 14 high schools of the state in accordance with the provisions of "An act to provide for the organization, control and equipment of high school cadet companies, and for the promotion of rifle practice therein," approved April 5, 1911, and amended May 20, 1915.

A cadet company may be organized in any high school having forty or more pupils fourteen years of age or over. The minimum number of members in the cadet company has been fixed at forty. The members are under the guidance and control of the principal of the school concerned but the Adjutant General of California has compiled a book of suggestions concerning the organization and drill of cadet companies. The companies are inspected once each year by officers of the national guard or naval militia detailed by the Adjutant General for that purpose. The members of cadet companies must wear a uniform similar to that of the national guard of California. The companies are supplied with a sufficient number of obsolete rifles, and target practice is a part of the instruction given. The principal officers of the company are commissioned by the Adjutant General and are chosen from third and fourth year pupils.

Cadet drill is compulsory in the Placer Union High School at Auburn, but elective in all other schools in which cadet companies are maintained. In two schools the companies drill three times a week. In all other schools they drill twice a week. The average time devoted to cadet drill is a little over an hour each week.

The following table shows the organization of cadet companies in the state.

Table Showing Organization of High School Cadet Companies in California.

High school	Company	Commissioned officers	Enlisted	Aggregate
Placer (Auburn)	1 and 13	9	73	82
Gilroy	9	3	44	47
Marysville	18	3	44	47
San Jose	14 and 19	3	39	42
San Mateo	22 and 23	0	100	100
Alameda	11 and 12	9	119	128
Oakland Technical	20 and 21	9	143	152
Los Angeles High	2	3	41	44
Los Angeles High	3	3	43	46
Los Angeles High	4	3	37	40
Los Angeles High	24	2	31	33
Sacramento	5, 6 and 16	11	160	171
San Francisco (Mission)	7	3	61	64
San Francisco (Polytechnic)	8 and 10	8	102	110
San Francisco (Commerce)	17	3	45	48
Tamalpais (Mill Valley)	25	3	73	76
San Francisco (Lowell)	26 and 27	6	142	148
Totals	26	81	1,297	1,378

INTRODUCTION OF SUPERVISED STUDY.

At no period in the history of secondary education has the problem of teaching pupils how to study been given greater emphasis than at present. Studies of statistics showing the number of pupils leaving school before graduation and investigations of the reasons for failure in school studies have aroused school administrators and teachers to the importance of teaching pupils *how* to attack the problems of the classroom. We have reason to believe that many pupils become discouraged in school work because they do not know *how* to study. We have been placing emphasis on the subject matter to be studied and have frequently lost sight of the pupil who must master the subject matter. We are coming to realize that the pupil, not the subject, is the center about which the school must be organized. The emphasis upon study is therefore indicative of a new spirit in secondary education.

The plan of supervised study.

Throughout the state the Commissioner has noted an earnest effort to solve the study problem. In most instances principals and teachers have adopted some plan of supervised study as the best means of solving the problem. Among the first schools to introduce supervised study in some form were Visalia, Placer (Auburn), Pasadena, Tamalpais Union (Mill Valley), Manual Arts (Los Angeles), and Vallejo high schools. The plans differ in detail of organization but are one in spirit and aim. Most of the schools that have introduced the plan are working on the hour basis. The teacher of a given subject has the class for one full hour and may divide the time between study and recitation as he thinks best. It has been found highly advantageous to have the study as well as the recitation of a lesson under the direction of the teacher of the subject.

Wherever the plan has been tried there has been improvement in the work of the pupils. It has been necessary to lengthen the school day in some schools in order to introduce supervised study but teachers have found that longer hours are less wearing than the worry over failures by the conscientious teacher under the old plan. It has been found that more teachers are required under the plan of supervised study but school boards have taken the position that it is cheaper to prevent failures than to carry a large number of repeaters in the various classes.

Statistics showing effect of supervised study.

Principal John F. Engle of Placer Union High School has submitted the following statistical study showing the effect of supervised study on pupils' marks:

Statistics 1915–1916.

	Superior	Strong	Medium	Poor	Weak
First semester— (old plan)	7.2%	14.1%	53.4%	15.5%	9.3%
Second semester— (supervised study)	12.8%	17.4%	53.3%	9.9%	6.3%
	+5.6%	+3.3%	—.1%	—5.6%	—3%

The following table shows the effect of supervised study on failures in Placer Union High School in 1915–1916.

	First semester (unsupervised study)	Second semester (supervised study)
Number of courses taught	1,010	975
Failures	92.4	62
Percentage	9.3	6.3

It will be observed that the introduction of supervised study had the effect of almost doubling the number of "superior" marks. In the first semester, under unsupervised study, 21.3 per cent were above "medium"; in the second semester, under supervised study, 30.2 per cent were above "medium." The second table shows that the number of failures was reduced by almost one-third.

The Commissioner is lending every encouragement to the supervised study movement. Many schools introduced the plan at the beginning of the current school year. As the plan demonstrates its value it will commend itself undoubtedly to school faculties and boards of education throughout the state.

THE HIGH SCHOOL LIBRARY.

Status of high school libraries.

Closely allied with the problem of teaching pupils how to study is the problem of making the high school library a more efficient instrument of education. We have on the shelves of the high school libraries of California 375,000 volumes. Estimates submitted by the principals indicate that about one-third of these books are seldom used by high school pupils. With such wealth of supplementary and reference material available the high school teachers should make every effort to use it for educational ends.

An investigation of high school libraries in California made in 1915 showed a distribution with respect to size, as follows:

42 high schools had	500 books or less
82 high schools had	501–1000 books
51 high schools had	1001–1500 books
20 high schools had	1501–2000 books
22 high schools had	2001–3000 books
16 high schools had	3001–4000 books
3 high schools had	4001–5000 books
7 high schools had	over 5000 books

Special credentials in library work.

In September, 1915, the State Board of Education inaugurated the policy of granting special credentials upon which county boards of education may grant special certificates in library craft, technique and use. To obtain this credential, the candidate must give satisfactory evidence of at least four years of training, or the equivalent, subsequent to graduation from high school. This training must include adequate training in library work. The adoption of this policy has resulted in raising high school library work to the dignity of a profession and has encouraged the employment of librarians thoroughly trained for the work. During the year ending June 30, 1916, 30 credentials in library craft, technique and use were granted by the State Board of Education.

The smaller high schools can not afford to employ librarians whose time will be devoted strictly to the library. These schools must depend upon teachers holding high school certificates who have had some training in the functions and duties of the librarian. It has been stated that the University of California is looking forward to the establishment of a course in library work which prospective teachers may elect during their college course. The state library at Sacramento and the library schools at Riverside and Los Angeles have also manifested a willingness to cooperate with the State Board of Education in training teacher-librarians. With such cooperation the outlook for more efficient conduct of high school libraries is very favorable.

Need for a better policy concerning high school libraries.

Statistics compiled from replies to a questionnaire sent to high school principals show that the average annual expenditure for library books in the high schools of California is approximately a dollar and a half for each pupil. It is apparent to one who has inspected high school libraries that the library expenditure is not advantageously made in many schools. In many libraries there are rows of books that are seldom if ever used. Too frequently the books selected are of the type adapted to college rather than high school work. The shelves are filled with books that the teacher found helpful in her college courses. After they are placed on the shelves of the library, however, they are seldom used by the pupils or teacher.

There is need for standardization of libraries especially in the smaller high schools. The staff of the state library, the California Association of Teachers of English and the Commissioner are working on the problem. The Commissioner hopes to publish a list of library books which will be helpful in building up libraries better adapted to high school work.

Cooperation with the county library.

California is fortunate in having an excellent county library system supported by county taxation. The librarians in the various counties are anxious to cooperate with the high schools and such cooperation is most desirable. In many of the counties, however, the funds available for the county library are not sufficient to permit the county library to install in each high school the reference and supplementary books necessary for high school work. The legislature of 1915 amended section 1741 of the Political Code so as to empower the high school board to enter into a contract with the county library for library service and pay for such service out of its funds. Several of the high schools have already taken advantage of the opportunity thus afforded.

The chief difficulty encountered in establishing cooperative relations between the high school and county library is the purchase of the necessary supplementary and reference material. It is quite unreasonable to expect the county library to install immediately $900 worth of books in a high school which pays only $100 for service. It is quite desirable, therefore, that the high school turn over to the county library sufficient funds to pay for the cost of those books which will remain in the high school building all the time. The state library staff has submitted a plan whereby the cost of such books shall be paid in three annual installments. After these books are installed, the extra service will be paid for by the high school board according to a fixed schedule which varies according to the size of the school. This extra service includes the furnishing of all books which are not needed in the high school building all the time, and the care of the reference library as well. I recommend this plan of cooperation to all high schools in which the library is not thoroughly equipped. In the larger schools, however, the library should be maintained directly by the high school board.

Status of high school librarians.

The following high schools report librarians devoting full time to their work:

Anaheim, Bakersfield (Kern), Berkeley, Eureka, Fresno, Fullerton, Hayward, Huntington Beach, Long Beach, Los Angeles, Los Angeles (Gardena), Los Angeles (Lincoln), Los Angeles (Manual Arts), Los Angeles (Polytechnic), Los Angeles (San Pedro), Monrovia, Oakland, Oakland (Fremont), Oakland (Technical), Ontario (Chaffey Union), Pasadena, Redlands, Riverside (Boys), Riverside (Girls), San Bernardino, San Diego, San Fernando, San Jose, Santa Ana, Santa Barbara, Santa Maria, Sacramento, Stockton, Whittier. *Total—34.*

The annual salaries paid to librarians in the various high schools mentioned above were as follows:

Salary	Number of high schools paying
$300– $400	1
400– 500	2
500– 600	1
600– 700	4
700– 800	4
800– 900	3
900– 1,000	4
1,000– 1,100	3
1,100– 1,200	1
1,200– 1,300	1
1,300– 1,400	3
1,400– 1,500	2
Over 1,500	5
Total	34

Of the 34 librarians giving full time to their work, 17 hold regular high school certificates or special certificates in library craft use and technique. With respect to training, 17 have had training in library schools and 8 have taken summer courses or private instruction in library work. Of the total number, 21 have had experience in public or college libraries.

Table Showing Schools Employing Teacher-Librarians and Time Devoted to Library Work.

High school	Time devoted to library work during day
San Mateo	5 periods
Lemoore	1 period
Puente	1 period
Hollister (San Benito)	1 period
Exeter	4 periods
Ferndale	1 period
Corona	1 period
Auburn	4 periods
Oakland (Vocational High)	1 period
Hemet	2 periods
St. Helena	1 period
Pomona	3 teachers, 2 periods a day each
Orange	2 periods
National City	3 periods
Santa Monica	4 periods
Venice	5 hours a day
Alameda	1 period
Alhambra	about 2 hours a day
Inglewood	4 or 5 periods
Salinas	1 period
Sonoma	3 periods
Santa Rosa	about 4 periods

Training of teacher-librarians.

Of the teacher-librarians, 2 have had training in library schools, 7 have taken summer courses or private instruction in library work and 5 have had experience in public libraries. All teacher-librarians hold the regular high school certificate.

Instruction in library use.

In Pasadena High School the librarian gives one lecture on the use of the library to all first-year pupils. She also gives detailed instruction in library craft and technique to a vocational class, limited to third and fourth year pupils.

In Sacramento High School the librarian gives a course of five lectures to first-year pupils, followed by written practice work. She also prepares bibliographies and group collections of books for other teachers.

In Berkeley the librarian gives about 20 periods each week to library instruction (largely individual) in the tenth year.

In Oakland Technical High School the librarian gives two periods a day to library instruction. She is assisted by 10 pupils. The work begins with the second year.

In Manual Arts High School, Los Angeles, library instruction is given during the first year, 4 periods each week.

The Polytechnic High School in Riverside reports library instructions in the first year only. About 12 periods are given to the work.

In Santa Ana High School 3 or 4 periods each year are given over to instruction of first year pupils in library use.

In Oakland High School several lessons each year are given in all grades.

In Lincoln High School (Los Angeles) one period each year is given to instruction in the use of the library.

In the Girls High School, Riverside, pupils are given individual instruction. The time given varies from 3 to 5 periods each year.

Library instruction in the Fremont High School in Oakland is given during the first and fourth years. About 3 periods each year are devoted to the work.

In Polytechnic High School, Los Angeles, a course in library work is given five periods each week for 20 weeks. The course is open to eleventh and twelfth-year pupils.

In Los Angeles High School a graduated course of lectures is given to the pupils of all grades. These lectures are generally given at the opening of the term.

In Stockton High School a few lectures on library use are given at the beginning of the first year.

PROBLEMS OF THE SMALL HIGH SCHOOL.

In 1915–1916 there were 60 high schools in California reporting an enrollment of 50 pupils or less. Grouped with respect to location, 25 are in the coast region and in the mountains bordering the great interior valley, 22 were in the great interior valley, and 13 were in southern California. Practically all of these schools in the mountains and coast region are in communities that show little growth in population during the last ten years. Those located in southern California and in the great interior valley are in sparsely settled districts. Of the total number, 28 have been established during the last four years and most of these have not yet reached normal enrollment. These small high schools have special problems which deserve careful consideration.

Frequent changes in teaching positions.

A study of the status of the teacher in the small high school throws some light on the problems of this type of school. Only 21 high schools employ less than four teachers. The official October reports show 8 small high schools employing two teachers; 13, three teachers; 15, four teachers; 15, five teachers; 6, six teachers; 1, seven teachers; 1, nine teachers; and 1, eleven teachers. These figures include part-time teachers. It would seem that for number of pupils enrolled the number of teachers employed in small high schools is quite adequate.

The Commissioner has compiled data showing that the tenure of principals and teachers in the small high schools is all too short. Of the 32 small high schools established previous to 1911–1912, 6 made no change in the principalship during the four years ending June 30, 1916; 11 made two changes; 12 made three changes; 2 made four changes; and 1 made five changes. The average tenure of principals was a little over two years. These schools employed in 1915–1916, 104 assistant teachers. Of this number only 10 were teaching in California high schools in 1911–1912. It would seem therefore that the small high schools are taught, for the most part, by teachers with little experience.

Longer tenure necessary.

It is recognized that many of the small high schools are doing satisfactory work. However, frequent changes in the teaching corps places these schools under a serious handicap. It is generally conceded that continuity of teaching service is quite essential to the maintenance of good school work. Whenever a change is made the incoming principal or teacher must study the school situation and adjust himself to community conditions. Two years is none too long for this study and adjustment, after which the principal or teacher may render far better service. A continuance of the tenure of the principal or teacher for several years beyond this period is generally desirable.

Not infrequently the change is made by the school board itself. In some instances a new school board feels that by virtue of its election it has a popular mandate that a change of some kind be made, so it proceeds to dismiss members of the faculty. This situation suggests the desirability of longer tenure for the trustees. It would be far better, the Commissioner believes, if trustees were elected for a five-year term, one trustee retiring each year. To this plan there may be objection on the ground that the constitution limits to four years the tenure of public officers not specifically excepted. It is possible, however, to increase the trustee's term to four years. It is desirable, also, that high school boards be authorized by law to employ principals for a four-year term after one year of probationary service.

A salary schedule suggested.

Most of the changes in the teaching corps of the smaller high schools are brought about by voluntary resignation. Teachers and principals are willing to leave positions in the small schools to accept positions paying better salaries. On pages 188–190 tables showing the salaries paid in the various classes of high schools are published. It will be noted that the average salary of principals in the small high schools is approximately $1,700 per annum. There are 35 high schools in California paying less than this amount and 215 high schools paying more. Naturally, the principals of small high schools aspire to become principals of schools paying better salaries. While it is impossible for the small high school to pay salaries comparable with those of the larger schools, the high school board may hold the principal for a longer period by adopting a graduated salary schedule based upon length of service in the community. By fixing the minimum salary at $1,600 per annum, for example, and advancing the salary $100 per annum until a maximum of $2,000 is reached, school boards in charge of small high schools will undoubtedly be able to retain the services of principals for a term of years.

When we consider teachers' salaries we find a similar situation. Good teachers are in demand and better salaries attract them. By adopting a salary schedule based upon experience the school board will establish a condition favorable to the retention of teachers by the district for a longer period. The Commissioner suggests that the minimum salary in small high schools be fixed at $1,000 per annum, and that provision be made for an increase in the salary annually until a certain maximum is reached. The additional amount paid to teachers under this plan will yield better returns to the community than the same amount expended for an additional teacher.

Problems of the course of study.

In planning the course of study for small high schools it is not necessary to include all the subjects or courses taught in larger high schools. The law requires that the high school offer one course of study that will prepare graduates therein for admission to the state university. It does not require that the high school offer courses that will prepare graduates therein for admission to all of the colleges of the state university. The small high school should, generally speaking, limit its college preparatory course to subjects required for admission to the College of Letters and Science. Graduates who desire to enter other colleges may enter with certain deficiencies, and the ambitious student may remove these deficiencies after he has matriculated. There is a reasonable limit to public expenditure for education and this limit is exceeded when classes in certain branches are maintained for one or two pupils. In some instances courses are offered which are not required for admission to college, although classes in these courses are too small to justify their maintenance. Third and fourth year classes in languages may be cited as examples. Unless at least four pupils elect to take third or fourth year work in a language the advisability of maintaining a class in this work is extremely questionable. By making a careful study of community needs the principal may keep the course of study within reasonable bounds. Here, again, the need for better tenure is evident. The principal can not adapt the course of study to the needs of the community unless he has had time and opportunity to study these needs.

Possibilities of branch high schools.

Magnificent distances and magnificent community ambitions are responsible for the establishment of an increasing number of small high schools. We can not overcome the former reason and we should not attempt to overcome the latter. The people of a community have an undeniable right to offer their children the best educational opportunity they can afford. It is possible, however, for the state to assist smaller communities to solve their school problems in a way that will prove more economical as well as more efficient. The Commissioner is of the opinion that in many smaller communities the establishment of four-year high schools is unnecessary. It would be more economical for these communities to establish branch high schools offering the first two years of high school work, such branch high schools to be affiliated with neighboring four-year high schools which would admit third and fourth year pupils living in the districts served by the branches on such terms as may be agreed upon, allowing full credit for work done in the branch high schools. In large high school districts the establishment of branch high schools governed by the high school board of the entire district is preferable to division of the district. The board could maintain in the branch high schools as many years of work as the conditions might justify. The cost per pupil in the third and fourth years is much greater than the cost per pupil in the first and second years. The maintenance of branch high schools would, therefore, be more economical for these communities than the maintenance of independent four-year high schools.

Work of branch high schools.

Branch high schools are now maintained in four centers in California. The Siskiyou Union High School district has established two branch high schools, one at Sisson, the other at Dorris. Both of these schools are under the supervision of Mr. E. L. Van Dellen, principal of the high school at Yreka. The expense of maintenance is paid by the district. The principal visits the schools once each month and the teachers in the branch high schools attend the monthly teachers' meetings at Yreka. At present only one teacher for each school is employed. The school at Dorris enrolls 15 pupils and the school at Sisson, 12 pupils. By adopting this plan the high school board is serving parts of the district which have heretofore sent few pupils to high school and has forestalled a division of the district.

In Corning Union High School District a branch has been established at Los Molinos. The school enrolls between 40 and 50 pupils. Two teachers are employed and two years of work offered. This branch was established to provide high school advantages in a part of the district separated from the main part by the Sacramento River and two sloughs.

The King City High School District in Monterey County is maintaining a branch high school in San Antonio District in cooperation with the board of trustees of the elementary school. The enrollment in the high school course is eight, only one year of work being offered. The high school teacher is also principal of the elementary school and also teaches the eighth grade. The school is under the supervision of the principal of the King City High School. The work offered in the high school department includes English, first year science, commercial arithmetic and manual training. The salary of the teacher is shared by both boards according to the number of pupils enrolled in each department.

Branch intermediate schools.

Branch high schools offering two years of high school work may be made to render better service if the seventh and eighth grades are included in their organization. The present law, limiting the organization of intermediate school courses to districts having an enrollment of 100 pupils in the seventh and eighth grades should be amended so as to remove this limit. Community intermediate schools embracing the seventh, eighth, ninth and tenth years, organized as branches of neighboring high schools, or independently may be made to serve the educational needs of many communities that are now without high school facilities. The establishment of such schools will secure greater economy in school organization, greater efficiency in the work of the seventh and eighth grades and broader opportunity for hundreds of boys and girls in California.

TAXATION AND EXPENDITURE FOR HIGH SCHOOLS.

The total revenue of the high schools of California for the year 1915–1916, was $8,712,176.96. To this amount the state contributed $827,200.52; the counties, $3,326,893.22; and the districts $3,802,076.52. The miscellaneous receipts amounted to $756,006.70. It will be noted that the state and counties now contribute a little over 47 per cent of the total revenue of high schools. Comparison of this percentage with the percentage of revenue derived by the elementary schools from the state and counties reveals the fact that the high schools are deriving less than half their revenue from state and county taxes, while the elementary schools are deriving more than two-thirds of their revenue from these sources.

The county high school fund bill which was enacted by the legislature of 1915 secured for the high schools a stable basis of revenue comparable with that of the elementary schools. The effect of this bill is shown in the equalization of taxation for high school purposes. The table of high school tax rates published in this report (pages 191–196) shows that the smaller high school districts have been helped very greatly by the provisions of this bill.

Cost per pupil enrolled.

The average cost per pupil for maintenance based upon the number of pupils enrolled in undergraduate and postgraduate courses in California high schools was $75.83 for the year 1915–1916. A study of the table showing the cost per pupil, published elsewhere in this report (page 191) reveals a wide range in the cost of maintenance. In the smaller high schools the cost is considerably greater than in the larger schools. This difference in cost is due chiefly to the fact that larger classes are maintained in the larger schools. Classes in the small high school enrolling five or six pupils are maintained at a cost that is approximately the same as that for classes of twenty-five pupils in the larger schools. Since the minimum cost of maintaining a class, regardless of its size, is approximately $200 per annum, the cost per pupil for a class of 5 pupils is $40 per annum, whereas the cost per pupil for a class of twenty-five pupils is only $8 per annum. In comparing high schools with respect to cost per pupil we should keep in mind the fact that the smaller schools, because of their smaller classes, must show a cost per pupil in excess of that of the larger schools.

Frequently the difference in the cost per pupil in elementary and high schools is a matter of speculation and comment. Realizing that the public is entitled to a full explanation of this difference, the Commissioner states the reasons as follows:

(1) In the graded elementary school one teacher gives instruction to a group of 30 or 40 pupils. In 1914–1915 the average annual enrollment per teacher in the elementary schools of California was 32; in the high schools, 22. The smaller enrollment in the high school classes can not be avoided. The high schools allow pupils to elect studies and courses while most of the elementary schools require that all pupils of a given grade take the same subject at the same time. We must recognize that the high school enrolls pupils whose interests and educational needs differ greatly. If the high school were obliged to adopt the plan of organization of the elementary school it would fail to realize its purpose. The additional cost per pupil in the high school represents very largely the price the state pays for democracy in secondary education.

(2) The laws of California and the educational situation in the high school require that the high school teacher spend five years in training after graduation from the secondary school, whereas the elementary school teacher may prepare for her work in two years. For this reason the salaries of high school teachers are higher.

(3) In order to meet the needs of modern civilization the high school has been obliged to introduce courses in science and vocational work. These courses require the installation and maintenance of expensive equipment which adds to the cost per pupil.

Taking all of these factors into account we must realize that the difference in cost between elementary and high schools is a legitimate difference. However, the Commissioner recognizes that the elementary schools in many districts should have better financial support to enable them to meet the educational needs of their pupils. He recognizes also that the first duty of the state is to provide adequately for its elementary schools. In California, very fortunately, we do not have to choose between efficiency in the elementary schools and democracy in the high schools. The state has the means to provide adequately for both elementary and high schools.

Table Showing Enrollment in California High Schools by Years (1902-1916).

Year	Boys	Girls	Total
1901–1902	5,830	8,462	14,292
1902–1903	7,499	9,974	17,473
1903–1904	9,219	12,230	21,449
1904–1905	10,525	13,728	24,253
1905–1906	12,374	15,701	28,075
1906–1907	11,372	16,202	27,578
1907–1908	14,102	17,912	32,014
1908–1909	15,386	18,912	34,298
1909–1910	17,680	21,435	39,115
1910–1911	20,453	24,036	44,489
1911–1912	21,922	25,498	47,420
1912–1913	26,831	31,247	58,078
1913–1914	30,918	35,009	65,927
1914–1915	36,218	40,211	76,429
1915–1916	45,986	49,419	95,405

Table Showing Number of Graduates and Number of Teachers Employed in California High Schools (1902-1916).

Year	Graduates			Teachers		
	Boys	Girls	Total	Men	Women	Total
1901–1902	757	1,150	1,907	295	311	606
1902–1903	799	1,275	2,074	337	404	741
1903–1904	880	1,368	2,248	370	485	855
1904–1905	1,007	1,584	2,591	407	590	997
1905–1906	1,078	1,735	2,813	445	692	1,137
1906–1907	1,100	1,790	2,890	420	768	1,188
1907–1908	1,187	1,981	3,168	480	834	1,314
1908–1909	1,495	2,281	3,776	566	924	1,490
1909–1910	1,720	2,527	4,247	649	1,062	1,711
1910–1911	1,864	2,898	4,756	783	1,213	1,996
1911–1912	2,154	3,204	5,357	910	1,402	2,312
1912–1913	2,606	3,951	6,557	1,049	1,592	2,644
1913–1914	3,079	4,398	7,477	1,206	1,791	2,997
1914–1915	3,525	4,851	8,376	1,394	1,989	3,383
1915–1916	3,781	5,182	8,963	1,610	2,389	3,999

Table Showing Cost per Pupil per Annum for Maintenance in Elementary and High Schools of California, 1902-1916.

(Cost computed on the basis of state enrollment.)

Year	High school	Elementary school
1902–1903	$54 12	$23 17
1903–1904	60 10	23 35
1904–1905	59 22	23 16
1905–1906	71 95	26 75
1906–1907	77 24	28 09
1907–1908	68 09	25 91
1908–1909	70 99	30 17
1909–1910	74 85	31 98
1910–1911	80 88	34 76
1911–1912	90 21	34 41
1912–1913	90 96	37 51
1913–1914	88 95	35 72
1914–1915	87 10	39 06
1915–1916	*76 72	38 04

*Not including postgraduate students.

Table Showing Maximum Salaries Paid to Teachers in High Schools (1915-1916).

Enrollment	$800	$900	$1,000	$1,100	$1,200	$1,300	$1,400	$1,500	$1,600	$1,700	$1,800	$1,900	$2,000	$2,100	$2,200	$2,300	$2,400
1- 50	1	2	13	11	17	2	8	4		2							
51- 100			2	10	19	11	7	9		3							
101- 200					11	13	15	17	5	3	2		1				3
201- 300							1	15	4	3	4	2	3		2		
301- 400							1	1		1			1				
401- 500							1	3			1				2		
501- 750								1	2	1	2	1	2		2		
751-1,000															2	1	1
1,000 and over											5		1	1	1	1	5
Total of schools enrolling less than 100	1	2	15	21	36	13	15	13		2							
Total schools enrolling more than 100					11	13	18	37	11	8	14	3	8	1	9	2	9
Total, all schools	1	2	15	21	47	26	33	50	11	10	14	3	8	1	9	2	9

NOTE.—The figures in the several columns indicate the number of schools with the given enrollment paying the maximum salary stated at the head of each column.

Table Showing Minimum Salaries Paid to Teachers in High Schools (1915-1916).

Enrollment	$800	$900	$1,000	$1,100	$1,200	$1,300	$1,400	$1,500
1- 50	1	10	27	13	8	1		
51- 100	3	4	12	22	16		1	
101- 200	3	3	19	20	19	4	2	
201- 300		4	5	14	8	2	1	
301- 400					3		1	
401- 500	1		1	1	3	1		
501- 750		2	1	2	4	1		1
751-1,000					1	2		1
1,000 and over			1		4	4	4	1
Total of schools enrolling less than 100	4	14	39	35	24	1	1	
Total of schools enrolling more than 100	4	9	27	37	42	14	8	3
Total, all schools	8	23	56	72	66	15	9	3

NOTE.—The figures in the several columns indicate the number of schools with the given enrollment paying the minimum salary stated at the head of each column.

Table Showing Salaries Paid to High School Principals (1915-1916).

Enrollment	$1,100	$1,200	$1,300	$1,400	$1,500	$1,600	$1,700	$1,800	$1,900	$2,000	$2,100	$2,200	$2,300	$2,400	$2,500	$2,600	$2,700	$2,800	$2,900	$3,000	$3,100	$3,200	$3,300	$3,400	$3,500	$3,600	Average
1- 50	1		2	4	11	7	6	14	2	9	2	1					1										$1,724
51- 100				2	2	4	6	20	3	10	3	4		3	1												1,872
101- 200						2		10	6	11	6	4	6	15	4			1		4						1	2,203
201- 300										6	1	1	3	9	3	2	4		1	4							2,417
301- 400										2	1			1													2,125
401- 500												2			1			2		2							2,640
501- 750												2		1	1		3	1		2						1	2,704
751-1,000																				2		2					3,150
1,000 and over																				3			5		1	5	3,357
Totals	1		2	6	13	13	12	44	11	38	13	14	9	29	10	2	8	4	1	13		2	5		1	7	

NOTE.—The figures in the several columns indicate the number of schools with the given enrollment paying the salary stated at the head of each column.

Table Showing Enrollment Cost Per Pupil and Tax Rates in Various High School Districts of California (1914–1916).

The cost per pupil is computed according to number of pupils enrolled instead of average daily attendance to conform with the practice of computing average cost per pupil in the elementary schools.

Counties and high schools	Enrollment		Total cost per pupil for maintenance		Tax rate for maintenance, 1914-15	Tax rate for maintenance, 1915-16		
	1914-15	1915-16	1914-15	1915-16		County	District	Total
Alameda—								
Alameda	690	807	$63 91	$60 09	$.25	$.14	$.10	$.24
Berkeley	1,772	1,609	70 24	84 54	.31	.14	.12	.26
Hayward	138	148	184 72	116 97	.34	.14	.28	.42
Livermore	103	118	101 68	68 61	.32	.14	.12	.26
Oakland:								
Classical	1,010	893	99 25	68 49	.31	.14	.12	.26
Classical, Evening		1,206						
J. C. Fremont	1,007	1,082						
Technical	1,130	1,750						
Technical, Evening		93						
University	100	169						
Vocational	30	113						
Washington (Centerville)	133	127	109 02	115 13	.18	.14	.04	.18
Amador—								
Amador (Sutter Creek)	57	59	215 56	135 33	.35	.20	.15	.35
Ione	48	42	93 10	157 61	.40	.20	.10	.30
Jackson	93	97	88 50	83 33	.45	.20	.20	.40
Butte—								
Biggs	45	43	150 23	203 98	.30	.225	.15	.375
Chico	460	540	50 08	48 68	.30	.225	.07	.295
Gridley	121	148	93 87	80 96	.50	.225	.17	.395
Oroville	168	175	72 58	64 74	.25	.225	.08	.305
Calaveras—								
Bret Harte (Angels Camp)	83	81	79 47	90 65	.45	.11	.11	.22
Calaveras (San Andreas)	42	55	154 73	123 88	.10	.11	.19	.30
Colusa—								
Colusa	86	82	133 40	122 40	.30	.10	.30	.40
Maxwell	50	43	125 73	145 96	.30	.10	.15	.25
Pierce (College City)	48	50	180 21	191 71	.15	.10	.03	.13
Princeton	43	51	234 15	186 56	.17	.10	.27	.37
Williams	37	42	274 52	208 75	.30	.10	.33	.43
Contra Costa—								
Alhambra (Martinez)	77	87	131 84	129 40	.47	.10	.35	.45
John Swett (Crockett)	86	96	146 68	129 18	.31	.10	.20	.30
Liberty (Brentwood)	61	56	163 68	168 01	.20	.10	.15	.25
Mt. Diablo (Concord)	117	135	123 32	119 69	.20	.10	.17	.27
Richmond	242	279	100 34	90 99	.13	.10	.11	.21
Riverview (Antioch)	105	132	131 10	211 12	.52	.10	.40	.50
San Ramon (Danville)	32	43	176 79	134 36	.24	.10	.20	.30
Del Norte—								
Del Norte (Crescent City)	77	69	117 66	144 22	.18	.19	--------	.19
El Dorado—								
El Dorado (Placerville)	122	107	85 46	101 06	.18	.11	.18	.29
Fresno—								
Caruthers	25	26	128 83	274 29	.40	.15	.43	.58
Clovis	124	151	127 53	125 45	.70	.15	.43	.58
Coalinga	88	102	146 20	123 70	.15	.15	.12	.27
Fowler	127	140	122 43	97 71	.35	.15	.27	.42
Fresno	970	1,145	89 91	79 82	.29	.15	.25	.40
Kerman	64	63	190 11	227 77	.55	.15	.63	.78
Kingsburg	126	118	78 17	81 63	.65	.15	.20	.35
Laton	70	70	114 72	125 45	.37	.15	.45	.60
Reedley	184	184	124 44	141 80	.40	.15	.28	.43
Riverdale	30	39	97 79	210 45	.23	.15	.20	.35
Sanger	130	116	108 52	134 48	.55	.15	--------	.15
Selma	242	254	92 63	92 85	.65	.15	.43	.58
Washington (Easton)	119	100	125 99	133 36	.55	.15	.44	.59

Table Showing Enrollment Cost Per Pupil and Tax Rates in Various High School Districts of California (1914-1916)—Continued.

Counties and high schools	Enrollment		Total cost per pupil for maintenance		Tax rate for maintenance, 1914-15	Tax rate for maintenance, 1915-16		
	1914-15	1915-16	1914-15	1915-16		County	District	Total
Glenn—								
Glenn (Willows)	94	102	111 54	134 63	.15	.08	.12	.20
Orland	109	116	77 24	105 47	.20	.08	.16	.24
Humboldt—								
Arcata	108	150	91 50	84 14	.436	.12	--------	.12
Eureka	419	419	68 07	73 60	.305	.12	.0757	.1957
Ferndale	129	118	78 77	86 05	.443	.12	.066	.186
Fortuna	85	103	67 06	90 18	.50	.12	--------	.12
Imperial—								
Brawley	133	143	215 22	156 68	.60	.15	.22	.37
Calexico	69	72	204 24	201 03	.75	.15	.36	.51
Central (El Centro)	263	282	132 69	138 89	.75	.15	.40	.55
Holtville	100	113	145 37	123 09	.30	.15	.24	.39
Imperial	114	129	288 21	194 20	.63	.15	.44	.59
Imperial, Evening	--------	111	--------	13 33	--------	--------	--------	--------
Inyo—								
Big Pine	24	29	199 20	148 07	.36	.10	.13	.23
Bishop	129	151	84 34	79 60	.33	.10	--------	.10
Kern—								
Conley (Taft)	--------	65	--------	148 06	--------	--------	.20	.20
Delano	57	62	179 48	166 95	.50	--------	.60	.60
Kern (Bakersfield)	481	550	132 07	114 76	.085	--------	.11	.11
Maricopa	--------	41	--------	129 24	--------	--------	.25	.25
Wasco	--------	30	--------	179 55	--------	--------	.30	.30
Kings—								
Corcoran	52	62	171 15	189 77	.80	.13	.42	.55
Hanford	201	229	116 22	122 43	.40	.13	.30	.43
Lemoore	78	108	142 83	117 51	.25	.13	.45	.58
Lake—								
Clear Lake (Lakeport)	125	127	71 68	71 61	.22	.165	.04	.205
Middletown	28	32	61 15	104 62	.29	.165	.38	.545
Lassen—								
Lassen (Susanville)	49	74	228 83	150 79	.15	.05	.16	.21
Los Angeles—								
Alhambra	404	444	112 21	128 14	.75	.145	.42	.565
Antelope (Lancaster)	29	41	217 26	278 19	.25	.145	.39	.535
Bonita (Lordsburg)	113	134	114 87	104 00	.50	.145	.23	.375
Burbank	100	104	125 98	134 84	.50	.145	.18	.325
Citrus (Azusa)	157	187	163 18	149 38	.68	.145	.56	.705
Claremont	123	124	130 43	138 07	.70	.145	.42	.565
Compton	227	247	141 55	178 91	.40	.145	.44	.585
Covina	230	215	116 43	145 11	.52	.145	.27	.415
El Monte	121	121	121 62	151 61	.43	.145	.20	.345
Excelsior (Norwalk)	87	94	110 89	116 97	.75	.145	.60	.745
Glendale	434	588	107 31	105 77	.65	.145	.47	.615
Huntington Park	210	216	167 76	207 38	.50	.145	.59	.735
Inglewood	219	275	209 48	123 01	.30	.145	.44	.585
Long Beach	1,636	1,613	45 94	62 48	.44	.145	.13	.275
Long Beach, Evening	611	784						
Los Angeles city:			65 09	57 91	.34	.145	.21	.355
Franklin	--------	12						
Gardena	225	231						
Hollywood	1,332	1,460						
Lincoln	861	906						
Lomita	--------	17						
Los Angeles Classical	2,109	2,062						
Los Angeles Evening	2,018	3,378						
Manual Arts	2,740	2,733						
McKinley Ave., Eve'g	--------	1,216						
Polytechnic	2,911	2,971						
Polytechnic Evening	7,766	10,292						
San Pedro	144	183						
San Pedro Evening	--------	379						
Van Nuys	35	66						
Wilmington	44	55						
Wilmington Evening	--------	71						

Table Showing Enrollment Cost Per Pupil and Tax Rates in Various High School Districts of California (1914-1916)—Continued.

Counties and high schools	Enrollment		Total cost per pupil for maintenance		Tax rate for maintenance, 1914-15	Tax rate for maintenance, 1915-16		
	1914-15	1915-16	1914-15	1915-16		County	District	Total
Los Nietos (Downey)	92	111	142 49	141 41	.75	.145	.43	.575
Monrovia	239	292	123 24	115 27	.75	.145	.31	.455
Montebello	73	55	193 95	215 09	.65	.145	.44	.585
Owensmouth*	11	38	270 80	--------	.16	--------	--------	--------
Pasadena	1,643	1,650	112 51	79 53	.40	.145	.21	.355
Pasadena Evening	--------	807						
Pomona	597	657	38 00	78 61	.75	.145	.50	.645
Pomona Evening	1,090	590						
Puente	--------	62	--------	189 63	.20	.145	.52	.665
Redondo	168	203	140 35	130 05	.31	.145	.30	.445
San Fernando*	124	141	216 74	--------	.65	--------	--------	--------
Santa Monica	563	599	58 63	67 45	.54	.145	.44	.585
Santa Monica Evening	321	524						
South Pasadena	322	314	87 81	100 33	.50	.145	.18	.325
Venice	193	228	199 52	141 58	.55	.145	.60	.745
Venice Evening	--------	227						
Whittier	472	500	103 56	103 22	.50	.145	.16	.305
Madera—								
Madera	120	143	135 26	120 58	.15	.06	.08	.14
Raymond-Granite	--------	23	--------	102 25	--------	.06	.20	.26
Marin—								
San Rafael	216	247	84 11	71 29	.25	.11	.15	.26
Tamalpais (Mill Valley)	229	276	108 03	101 67	.43	.11	.45	.56
Tomales	20	26	156 28	126 13	.16	.11	.08	.19
Mariposa—								
Mariposa	24	26	84 46	139 54	.10	.13	--------	.13
Mendocino								
Anderson (Boonville)	29	51	153 37	122 80	.50	.17	.20	.37
Fort Bragg	89	113	64 01	69 26	.61	.17	.12	.29
Mendocino	72	77	103 41	141 34	.08⅓	.17	.05	.22
Point Arena	27	38	140 58	114 95	.20	.17	.10	.27
Round Valley (Covelo)	34	43	107 79	132 66	.36	.17	.165	.335
Ukiah	169	157	92 61	99 69	.16⅔	.17	.05	.22
Willits	86	82	83 60	75 24	.25	.17	.06	.23
Merced—								
Dos Palos	76	70	164 60	161 82	.10	.10	.15	.25
Gustine	38	41	239 62	285 84	.35	.10	.40	.50
Hilmar Colony (Irwin)	41	49	159 57	111 58	.60	.10	.30	.40
Le Grande	74	71	166 45	175 55	.60	.10	.30	.40
Merced	171	194	109 10	101 64	.15	.10	.10	.20
West Side (Los Banos)	35	44	260 23	229 78	.20	.10	.20	.30
Modoc—								
Big Valley (Adin)	--------	30	--------	101 00	--------	.10	.08	.18
Modoc (Alturas)	91	78	140 75	137 16	.20	.10	.10	.20
Surprise Valley (Cedarville)	68	65	108 40	119 09	.45	.10	.14	.24
Monterey—								
Gonzales	46	45	180 51	195 33	.35	.10	.15	.25
King City	78	85	233 59	144 84	.20	.10	.14	.24
Monterey	103	122	181 88	97 31	.20	.10	.13	.23
Pacific Grove	116	132	122 73	114 23	.95	.10	.43	.53
Salinas	173	172	82 00	87 10	.30	.10	.06	.16
Napa—								
Calistoga	91	128	75 84	79 71	.42	.14	.31	.45
Napa	273	262	72 10	73 65	.22	.14	.14	.28
St. Helena	90	89	110 55	108 09	.39	.14	.36	.50
Nevada—								
Grass Valley	179	195	48 98	57 85	.25	.30	.15	.45
Meadow Lake (Truckee)	32	39	156 52	102 93	.35	.30	.05	.35
Nevada City	144	134	56 86	73 19	.40	.30	--------	.30

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*Los Angeles city 1915-1916.

Table Showing Enrollment Cost Per Pupil and Tax Rates in Various High School Districts of California (1914-1916)—Continued.

Counties and high schools	Enrollment		Total cost per pupil for maintenance		Tax rate for maintenance, 1914-15	Tax rate for maintenance, 1915-16		
	1914-15	1915-16	1914-15	1915-16		County	District	Total
Orange—								
Anaheim	285	334	117 11	111 29	.90	.20	.55	.75
Fullerton	283	354	267 40	196 28	.57	.20	.40	.60
Huntington Beach	156	161	168 42	169 50	.55	.20	.60	.80
Orange	294	304	117 33	101 23	.75	.20	.45	.65
Santa Ana	733	869	99 36	95 31	1.00	.20	.50	.70
Placer—								
Lincoln	58	54	156 55	157 02	.45	.20	.25	.45
Placer (Auburn)	206	184	90 53	125 51	.30	.20	.25	.45
Roseville	97	189	116 14	58 33	.65	.20	.37	.57
Plumas—								
Plumas (Quincy)	50	43	174 91	207 21	.12	*	*	*
Riverside—								
Banning	40	36	185 30	236 20	.68	.29	.51	.80
Beaumont	58	61	154 49	167 17	.75	.29	.59	.88
Coachella	40	49	167 18	184 29	.22	.29	.06	.35
Corona	112	138	138 27	115 97	.49	.29	.48	.77
Elsinore	42	45	146 51	130 05	.68	.29	.33	.62
Hemet	173	194	95 29	93 07	.59	.29	.57	.86
Palo Verde (Blythe)	29	21	143 07	257 82	.75	.29	.36	.65
Perris	59	55	108 94	120 90	.42	.29	.19	.48
Riverside, Boys'	337	421	127 48	85 82	.54	.29	.23	.52
Riverside, Girls'	385	408	68 83	70 38	.54	.29	.23	.52
San Jacinto	70	81	116 33	107 09	.75	.29	.62	.91
Sacramento—								
Elk Grove	59	54	106 40	139 78	.20	.104	--------	.104
Galt	48	54	173 35	199 93	.36	.104	--------	.104
Sacramento	1,251	1,477	49 11	55 18	.154	10.4	.065	.169
Sacramento, Evening	989	1,901						
San Juan (Fair Oaks)	56	92	136 38	124 02	.56	.104	--------	.104
San Benito—								
San Benito (Hollister)	165	165	81 40	83 94	.15	.15	--------	.15
San Bernardino—								
Barstow	----------	25	----------	213 87	--------	.224	.15	.374
Chaffey (Ontario)	505	537	92 51	101 43	.70	.224	.42	.644
Chino	114	102	135 46	144 15	.46	.224	.40	.624
San Bernardino	535	615	79 85	70 10	.31	.224	.27	.494
Colton	136	152	95 12	99 57	.42	.224	.30	.524
Needles	37	36	172 87	207 03	.25	.224	.30	.524
Redlands	514	553	96 78	102 04	.56	.224	.30	.524
Victor Valley (Victorville)	----------	20	----------	297 08	--------	.224	.45	.674
San Diego								
Coronado	84	95	183 53	176 69	.69	.19	.63	.82
Cuyamaca (Julian)	31	22	146 10	204 22	.66	.19	.50	.69
El Cajon	116	117	95 66	101 94	.75	.19	.40	.59
Escondido	139	133	94 31	102 42	.75	.19	.74	.93
Fallbrook	40	31	172 30	211 55	.38	.19	.56	.75
National (National City)	202	229	96 81	85 80	.64	.19	.56	.75
Oceanside	60	64	148 23	163 96	.46	.19	.35	.54
Ramona	43	40	129 72	139 72	.75	.19	.75	.94
San Diego	1,876	1,995	107 55	48 11	.35	.19	.144	.334
San Diego Evening	----------	1,917						
San Francisco—								
Commercial	967	1,126	53 43	39 30	†	.0477	--------	.0477
Commercial, Evening	----------	1,504						
Girls'	626	720						
Humboldt, Evening	2,159	2,298						
Lowell	1,094	1,172						
Mission	527	569						
North Beach Evening	72	80						
Polytechnic	681	1,077						

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*Auditor could not state.

†Paid out of general tax levy of .222.

Table Showing Enrollment Cost Per Pupil and Tax Rates in Various High School Districts of California (1914-1916)—Continued.

Counties and high schools	Enrollment		Total cost per pupil for maintenance		Tax rate for maintenance, 1914-15	Tax rate for maintenance, 1915-16		
	1914-15	1915-16	1914-15	1915-16		County	District	Total
San Joaquin—								
Lodi	222	242	87 00	89 33	.27	.09	.07	.16
Ripon	28	44	214 53	146 52	--------	.09	.20	.29
Stockton	707	818	94 22	93 44	.26	.09	.136	.226
West Side (Tracy)	28	27	163 90	174 11	--------	.09	.08	.17
San Luis Obispo—								
Arroyo Grande	61	71	110 03	87 30	.35	.09	.21	.30
Paso Robles	94	115	103 99	115 16	.70	.09	.60	.69
San Luis Obispo	151	168	123 74	104 99	.90	.09	.50	.59
San Mateo—								
Half Moon Bay	45	33	186 96	234 61	.40	.07	.23	.30
San Mateo	250	287	123 42	136 52	.26	.07	.18	.25
Sequoia (Redwood City)	100	109	126 91	133 64	.19	.07	.09	.16
South San Francisco	23	32	149 18	181 83	.22	.07	.12	.19
Santa Barbara—								
Carpinteria	23	29	97 87	179 36	.68	.14	.40	.54
Lompoc	108	82	130 42	163 80	.60	.14	.30	.44
Santa Barbara	548	571	72 45	78 06	.37	.14	.262	.402
Santa Maria	133	129	129 86	126 53	.24	.14	.16	.30
Santa Ynez	33	48	245 39	175 83	.26	.14	.22	.36
Santa Clara—								
Campbell	118	106	88 62	111 81	.33	.16	.17	.33
Gilroy	136	133	94 92	73 01	.45	.16	.37	.53
Gilroy, Evening	----------	96						
Live Oak (Morgan Hill)	85	93	115 50	106 58	.47	.16	.18	.34
Los Gatos	124	134	102 83	94 39	.495	.16	.24	.40
Mountain View	135	136	117 49	117 24	.44	.16	.04	.20
Palo Alto	287	306	96 31	89 34	.53	.16	.23	.39
San Jose	1,377	1,462	76 50	69 42	.302	.16	.191	.351
San Jose, Evening	----------	646	----------	6 80	--------			
Santa Clara	144	168	103 68	89 31	.34	.16	.22	.38
Santa Cruz—								
Boulder Creek	31	35	155 52	144 45	.40	.195	--------	.195
Santa Cruz	390	466	94 83	83 76	.87	.195	.41	.605
Watsonville	296	300	74 04	86 73	.41	.195	--------	.195
Shasta—								
Anderson	97	101	79 33	81 45	.35	.14	.16⅔	.30⅔
Fall River (McArthur)	42	36	144 04	106 04	.25	.14	.10	.24
Shasta (Redding)	202	210	92 62	91 61	.15	.14	.05	.19
Sierra—								
Sierra Valley (Loyalton)	23	26	219 13	193 68	.20	.216	.12	.336
Siskiyou—								
Dunsmuir	25	26	171 58	142 42	.35	.07	.586	.656
Etna Mills	97	85	114 17	207 48	.30	.07	.428	.498
Siskiyou (Yreka)	104	128	141 25	127 34	.09	.07	.15	.22
Solano—								
Armijo (Fairfield)	111	131	134 61	135 67	.30	.14	.25	.39
Benicia	74	55	109 28	174 49	.57	.14	.32	.46
Dixon	69	91	113 43	131 15	.20	.14	.15	.29
Rio Vista	51	57	197 59	268 03	.20	.14	.23	.37
Vacaville	88	90	121 54	113 01	.40	.14	.18	.32
Vallejo	248	281	94 81	78 84	.50	.14	.27	.41
Sonoma—								
Analy (Sebastopol)	183	179	86 91	84 73	.18	.159	.20	.359
Cloverdale	40	43	102 40	89 77	.23	.159	.22	.379
Healdsburg	164	151	72 15	75 56	.40	.159	.49	.649
Petaluma	278	271	72 83	95 69	.27	.159	.27	.429
Santa Rosa	405	428	85 45	80 86	.42	.159	.37	.529
Sonoma	73	84	122 19	92 27	.25	.159	.19	.349

Table Showing Enrollment Cost Per Pupil and Tax Rates in Various High School Districts of California (1914-1916)—Concluded.

Counties and high schools	Enrollment		Total cost per pupil for maintenance		Tax rate for maintenance, 1914-15	Tax rate for maintenance, 1915-16		
	1914-15	1915-16	1914-15	1915-16		County	District	Total
Stanislaus—								
Ceres	94	131	205 58	101 38	.87	.20	.75	.95
Denair	46	55	101 57	121 51	.20	.20	.72	.92
Hughson	48	58	147 63	163 47	.65	.20	.75	.95
Modesto	254	312	85 69	80 54	.4886	.20	.45	.65
Oakdale	128	117	83 75	112 87	.26	.20	.10	.30
Orestimbo (Newman)	67	75	163 76	145 35	.35	.20	.30	.50
Patterson	51	49	201 01	162 36	.36	.20	.45	.65
Turlock	206	217	90 64	90 88	.23	.20	.25	.45
Sutter—								
Sutter City	102	103	155 87	130 06	.33	.10	.33	.43
Tehama—								
Corning	125	159	88 79	82 51	.40	.15	.20	.35
Red Bluff	224	236	83 91	80 89	.40	.15	.20	.35
Trinity—								
Trinity (Weaverville)	34	39	174 55	146 99	.15	.15	--------	.15
Tulare—								
Alpaugh	23	17	180 03	342 53	.58	.20	.17	.37
Dinuba	219	212	81 01	88 39	.75	.20	.33	.53
Exeter	146	165	113 18	95 02	.75	.20	.22	.42
Lindsay	137	174	117 27	87 87	.35	.20	.17	.37
Orosi	60	53	141 22	157 18	.72	.20	.24	.44
Porterville	269	303	96 32	88 20	.75	.20	.55	.75
Tulare	272	385	77 90	52 35	.75	.20	.18	.38
Visalia	275	274	99 51	92 52	.60	.20	.47	.67
Woodlake	25	32	149 05	184 38	.45	.20	.40	.60
Tuolumne—								
Summerville (Tuolumne)	55	53	135 36	141 13	.45	.25	.45	.70
Tuolumne (Sonora)	152	152	107 43	113 73	.25	.25	.25	.50
Ventura—								
Fillmore	114	134	130 78	99 74	.60	.11	.28	.39
Nordhoff	53	66	132 89	94 50	.66	.11	.28	.39
Oxnard	112	140	138 56	121 85	.17	.11	.08	.19
Santa Paula	121	150	112 43	95 62	.45	.11	.16	.27
Ventura	171	204	137 57	103 66	.25	.11	.07	.18
Yolo—								
Esparto	49	40	134 18	176 90	.33	.1022	.20	.3022
Winters	113	83	79 61	113 82	.40	.1022	.23	.3322
Woodland	257	295	83 42	66 94	.50	.1022	.22	.3222
Yuba								
Marysville	172	222	114 00	58 66	.40	.05	.35	.40
Marysville, Evening	----------	93						
Wheatland	18	22	255 53	226 67	.70	.05	.70	.75

LETTER OF TRANSMITTAL.

To the Honorable STATE BOARD OF EDUCATION,
Sacramento, California.

LADIES AND GENTLEMEN:

Pursuant to law and at your request I hereby submit to you the annual reports of the Commissioner of Industrial and Vocational Education for the biennial period ending June 30, 1916.

Very respectfully yours,

EDWIN R. SNYDER,
Commissioner of Industrial and Vocational Education.

BIENNIAL REPORT OF COMMISSIONER OF INDUSTRIAL AND VOCATIONAL EDUCATION.

WORK OF THE OFFICE.

In my report for the period ending June 30, 1914, I stated that, in addition to visitation and inspection, I had made it a part of my duty:

First—To encourage the introduction and extension of vocational education by counseling with boards of education, superintendents of schools and others interested in the subject, and by lecturing before bodies of teachers, school trustees and other organizations interested in educational, social, or civic matters.

Second—To influence and encourage teachers and school officials to modify the regular academic subjects of the curriculum in such manner as to make them more practical and consequently more useful.

Third—To make a statistical survey of the actual condition of the manual, domestic and vocational arts in the public schools of the state, and to segregate and make this material available to legislators, educators and others interested in the subject.

Fourth—To seek for those schools which have successfully developed vocational courses in the various subjects and advertise them to school authorities desiring the information.

Fifth—To consult freely with those in the state and elsewhere who have made a study of vocational education, and later to formulate for your honorable body what, in my judgment, is demanded by the situation in order that the public schools of California may more adequately provide for the training for their life work of those boys and girls who do not secure a professional or other vocational training in an institution of higher learning.

In so far as office duties permitted, I have engaged in these same activities and carried on these same investigations during the past two years.

During the session of the legislature, at the request of the educational committees and under your direction, a considerable amount of time was devoted to duties relating to proposed school legislation, a part of which was fostered by your honorable body. This same legislature saw fit to extend the duties and increase the responsibilities of the State Board of Education by placing the standardization of the normal school courses and the certification of teachers of special subjects in its hands.

As you are aware, the detail of handling the special credential problem was assigned to my department. This duty, with that of aiding the other commissioners and the board in the examination and selection of textbooks, the investigation and regulation of the normal school courses, the service attendant upon educational legislation and a large amount of miscellaneous office work, curtailed very greatly the opportunity of your commissioner to do field work. However, during the biennial period he made seventy-six trips to various communities where he inspected schools, counseled with school authorities and others interested in education, and delivered a total of sixty-four addresses.

This office has edited two numbers of the Blue Bulletin in addition to contributing regularly to the other issues.

At your request my department had prepared and published a vocational guidance bibliography. The services of Mr. Charles L. Jacobs of San Jose, California, were secured for this work. The reception of this bulletin in California and other states is sufficient evidence of its need and its merit. Although six thousand copies were provided the issue is practically exhausted. Several eastern educational institutions and city school departments requested large numbers, some desiring as many as a hundred copies. These they invariably offered to purchase, but having no authority to sell such publications the department forwarded a few copies to each with the proper explanation.

Since large numbers of other publications of your department are being sought for educational purposes by institutions outside the state and by individuals within and without the state who wish to make commercial use of them, perhaps it would be well for you to have the problem investigated in order to find whether or not it would be desirable to seek the authority to make a charge, under certain conditions, for some of your publications.

PART I.

GENERAL REPORT AND RECOMMENDATIONS.

Statistical Investigation.

Two years ago a statistical investigation of vocational work in the public schools of California was made by this office. Certain of the findings of this investigation were submitted to you in a previous report. This year a more comprehensive survey has been made. Due to the newness of the work, the undefined character of the courses, the failure to grasp the real meaning of vocational education, and the difficulty of establishing definite lines of demarkation, neither of these studies has proven entirely satisfactory from the standpoint of the investigator. However, the recent survey has been much more satisfactory than the previous one, and gives promise for a future investigation that will be quite satisfactory both as to scope and detail.

The reports of the various schools indicate clearly that the school men and women of the state have secured a grasp of the situation and the resulting problems which they by no means possessed two years ago. The greatest difficulty has been to establish a distinction between general training such as is secured in drawing, manual training, etc., and specific special training which prepares directly for a certain occupation.

In order to avoid as much error as possible, the investigation was planned to cover the entire field closely related to vocational education. A full detailed report was secured on each course, including the topics covered, so that it was possible with the information at hand to decide with a fair degree of accuracy as to whether it served as a vocational course, a course supplementing a vocation, or a prevocational, cultural, disciplinary or educational preparatory course.

The questionnaire called for a report on manual training, domestic science and art, commercial, trade, industrial, agricultural, and other prevocational, or vocational courses, or vocational guidance courses, or courses strictly supplementary to vocations given during the year 1915–16.

The following definitions and explanations were made:

1. A course is *vocational* only when it is designed to prepare in a finished or in a preliminary manner specifically for a profitable occupation.
2. The phrase *strictly supplementary to a vocation* should be applied only to courses provided for individuals already engaged in a vocation. These courses should be dominated by

the need of the vocation. Drawing, science and mathematics courses provided for individuals engaged in trade or industrial occupations are good illustrations.

3. Where a subject is supplementary, name the vocation or vocations which it supplements.

A few of the schools failed to report even after having been notified four times, and other schools failed to report all of the courses maintained. In certain of these cases the desired information has been secured indirectly and is incorporated in the report. Some omissions will therefore appear in the report, but probably few, if any, courses are listed where they do not exist.

In several instances, Table I, pages 204–209, shows that some high schools gave certain courses before they appear to have been established. This is explained by the fact that many of the schools existed before they qualified for state aid at the date given.

The household art, commercial, and agricultural courses are all listed as vocational since in every case they are governed by the idea of preparing for a profitable occupation. In many cases these courses are not truly vocational, but the failure to make them so is not due to intent, but rather to a lack of knowledge of what to teach and how to teach it. Experience alone can furnish this knowledge.

The vocational courses listed under woodwork are usually pattern making, carpentry, or bench work in wood and wood manufacture. The vocational courses listed under ironwork are usually machine shop or blacksmithing courses. Many of the strictly vocational courses reported are to be found in the footnotes. The following is a summary of these:

Automobile mechanics	12 schools
Applied elements of civil engineering	7 schools
Applied elements of electrical engineering	10 schools
Applied elements of mechanical engineering	5 schools
Applied elements of architectural engineering	3 schools
Applied elements of structural engineering	3 schools
Applied elements of mining engineering	1 school
Applied elements of marine engineering	1 school
Printing	8 schools
Blacksmithing	4 schools
Salesmanship	3 schools
Advertising	1 school
Window dressing	2 schools
Journalism	1 school
Library craft	3 schools
Millinery for the trade	4 schools
Dressmaking for the trade	3 schools
Vocational drawing	11 schools

The automobile mechanics courses prepare the students for general garage work and include a study of ignition systems, carburetors, assembling and general repair.

The courses in applied elements of engineering deal primarily with the mechanical, industrial and other practical aspects of the work, and deal with the technical side only to the extent necessary in establishing a comprehension of the applied work. These courses are not planned to duplicate the work of the university in the engineering field, but are designed to prepare young men directly for industrial work. At the same time they are so organized as to give them a sufficient amount of the underlying science and mathematics to enable them to advance in their chosen occupations. In most of the industrial fields the secondary group of leaders is recruited from the experienced workers. These men must have not only industrial experience, but also a reasonable amount of technical knowledge. The men employed as foremen and superintendents outnumber many times those employed as engineers. It is for such positions that the applied courses in these subjects aim to prepare young men.

Printing as a vocational subject in California high schools is comparatively new, none other than craft courses dating back more than four years. These courses are unusually successful. This is probably due largely to the ease with which the job printing establishment may be duplicated in the schoolroom, together with the opportunity for practical work growing out of the needs of the various city school departments. However, another factor has had much to do with this success—these courses are handled in most cases by practical printers.

The blacksmithing courses listed above are not courses in forging, such as are usually given in technical schools. They are courses in real blacksmithing and are designed to prepare young men for the work. They aim to produce a commercial product and in some cases they are succeeding admirably.

Courses in salesmanship are more or less successfully maintained in three day high schools in the state. The courses are new and are largely of an experimental character. This is one of the most promising fields for vocational training and will be more fully discussed later.

Millinery and dressmaking for the trade exist in three or four high schools in the state. The courses are conducted by experienced milliners and dressmakers and are fitting many young women for profitable employment.

Vocational drawing courses were reported by eleven schools. These include such subjects as machine design, and drafting and plotting as applied to the various fields of engineering.

Vocational and semivocational courses in band and orchestral music are maintained by a number of the largest high schools in the state. The high schools of Oakland have probably advanced further along this line than those of any other district, though the work is being rapidly developed in other sections, notably in and around Los Angeles city.

TABLE I.

Statistical Report of Manual and Vocational Subjects Taught in California Day High Schools.

Explanation: P indicates that the course is of a prevocational, preparatory, cultural or disciplinary character; V indicates that the course is vocational; S indicates that the course directly supplements a vocation. The number indicates the year the course was introduced.

School and date of establishment	Manual and industrial arts			Household arts		Commercial training for office work	Agriculture, one or more phases
	Wood work	Iron work	Craft work	Science	Art		
Adin, '15	*	*	*	*	*	*	*
Alameda[1], '75	P '12	P '14	P --	V '12	V '12	V '12	--------
Alhambra, '98	P '11	P '11	--------	V '11	V '11	V '07	--------
Alpaugh, '13	*	*	*	*	*	*	*
Alturas, '03	P '14	--------	--------	V '13	V '13	V '05	--------
Anaheim, '98	P --	--------	--------	--------	--------	V --	--------
Anderson, '09	PS '15	--------	--------	--------	--------	V '09	V '16
Angels Camp, '05	--------	--------	--------	--------	--------	V '06	--------
Antioch, '03	P '12	--------	--------	V '12	V '12	V '10	V --
Arcata, '94	--------	--------	--------	--------	--------	V '10	V --
Arroyo Grande, '92	--------	--------	--------	--------	--------	V '08	--------
Auburn, '01	P '12	--------	P '12	V '10	V '10	V '05	--------
Azusa, '91	P '10	--------	--------	V '11	V '11	V '08	--------
Bakersfield, '92	P --	P --	--------	V '08	V '08	--------	V '11
Banning, '94	--------	--------	--------	V '15	V '15	--------	--------
Barstow, '15	--------	--------	--------	V '15	V '15	V '15	--------
Beaumont, '09	--------	--------	--------	V '14	V '14	V '14	--------
Benicia[2], '97	PV '13	--------	--------	V '15	V '15	--------	--------
Berkeley[3], '83	V '09	--------	P '11	V '09	V '09	V '09	--------
Biggs, '12	P '13	--------	--------	--------	V '13	V '13	--------
Big Pine, '09	--------	--------	--------	--------	--------	V --	--------
Bishop, '02	P '15	--------	--------	V '15	V '15	V '14	V '15
Blythe, '14	--------	--------	--------	--------	--------	V '14	--------
Boonville, '12	--------	--------	--------	--------	--------	V '13	V '15
Bostonia, '93			--------	--------	--------	V --	--------
Boulder Creek, '05	--------	--------	--------	--------	--------	V '15	--------
Brawley, '08	P '09	--------	--------	V --	V --	V '10	--------
Brentwood, '01	P --	--------	--------	--------	--------	V --	--------
Burbank, '08	P '11	--------	--------	V '11	V '11	V --	--------
Calexico, '10	P '13	--------	--------	V '13	V '13	V --	--------
Calistoga, '12	--------	--------	--------	V '15	V '15	V '12	--------
Campbell, '00	PS '12	--------	--------	--------	--------	V --	--------
Carpinteria, '14	P '15	--------	--------	--------	--------	--------	--------
Caruthers, '14	*	*	*	*	*	*	*
Cedarville, '03	P '14	--------	--------	V '14	V '14	V --	V '14
Centerville[4], '92	P '11	--------	--------	V '11	V '11	V '08	V '12
Ceres, '08	P '14	--------	--------	V '14	V '14	V '15	--------
Chico, '02	P '11	--------	--------	--------	--------	V --	V '12
Chino, '97	P '11	--------	--------	V '12	V '12	V '15	V --
Claremont, '10	P '10	--------	--------	V '11	V '11	V '11	--------
Cloverdale, '91	*	*	*	*	*	*	*
Clovis, '99	P '14	--------	--------	V '13	V '13	V --	--------
Coachella, '10	P '13	--------	--------	--------	--------	V '12	--------
Coalinga, '08	P '13	--------	--------	V '13	V '13	V '13	--------
College City, '97	P '13	--------	--------	V '12	V '12	V '06	--------
Colton, '95	P '14	--------	--------	V '14	V '14	V '05	--------
Colusa, '93	P --	--------	--------	V '14	V '14	V --	--------
Compton, '96	P '09	P '09	--------	V '09	V '09	V '09	--------
Concord, '01	P '13	--------	--------	V '13	V '13	--------	--------
Corcoran, '12	P --	--------	--------	V '14	V '14	V '13	--------
Corning, '03	--------	--------	--------	V --	V --	V --	--------
Corona, '94	P '11	--------	--------	V '11	V '11	V '14	--------
Coronado, '13	P --	P --	--------	V '13	V '13	V '13	--------
Covelo, '06	PS '15	--------	--------	V '15	V '15	V '16	--------
Covina, '99	P '09	--------	--------	V '09	V '09	V '07	--------

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*Reports no courses.

[1] Maintains courses in applied elements of civil and electrical engineering.

[2] Maintains course in applied elements of civil engineering, introduced 1913.

[3] Maintains course in library craft, introduced 1915.

[4] Maintains course in printing, introduced 1915.

TABLE I—Continued.

Statistical Report of Manual and Vocational Subjects Taught in California Day High Schools.

Explanation: P indicates that the course is of a prevocational, preparatory, cultural or disciplinary character; V indicates that the course is vocational; S indicates that the course directly supplements a vocation. The number indicates the year the course was introduced.

School and date of establishment	Manual and industrial arts			Household arts		Commercial training for office work	Agriculture, one or more phases
	Wood work	Iron work	Craft work	Science	Art		
Crescent City, '93	P --	----------	----------	V '14	V '14	V '14	V '15
Crockett, '01	P '13	----------	----------	----------	V '12	V --	----------
Danville, '10	----------	----------	----------	----------	V '15	V '14	----------
Delano, '11	P --	----------	----------	V --	V --	V --	----------
Denair, '12	----------	----------	----------	----------	----------	V --	----------
Dinuba, '99	P --	----------	----------	V --	V --	V --	----------
Dixon, '92	----------	----------	----------	V '15	V '15	V '12	----------
Dos Palos, '07	----------	----------	----------	V '14	V '14	V --	V '15
Downey, '02	P '14	----------	----------	----------	----------	V '10	----------
Dunsmuir, '11	----------	----------	----------	----------	----------	V '13	----------
El Cajon (see Bostonia).							
El Centro, '08	P --	----------	----------	V '13	V '13	V --	V --
Elk Grove, '93	P '14	----------	----------	V '12	V '12	----------	V '12
El Monte, '01	P '15	----------	----------	V '15	V '15	V --	----------
Elsinore, '91	----------	----------	----------	V '14	V '14	----------	----------
Escondido, '94	P '10	P '10	----------	V '10	V '10	----------	----------
Esparto, '92	P '16	----------	----------	V '13	V '13	V '10	----------
Etna Mills, '92	PS '16	----------	----------	V '15	V '15	V --	V '13
Eureka, '95	P '09	----------	----------	V '08	V '08	V --	----------
Exeter, '08	P '11	----------	----------	V '11	V '11	V --	----------
Fairfield, '91	PV '12	P '15	----------	V '14	V '14	V '93	----------
Fair Oaks, '13	----------	----------	----------	V '15	V '15	V '13	----------
Fallbrook, '92	----------	----------	----------	V '14	V '15	V --	----------
Ferndale, '04	----------	----------	----------	V '13	V '13	V '13	V '13
Fillmore, '09	P '11	----------	----------	V '15	V '15	V --	----------
Fort Bragg, '02	----------	----------	----------	V '14	V '14	V '05	----------
Fortuna, '05	*	*	*	*	*	*	*
Fowler, '98	P --	----------	----------	V --	V --	V --	----------
Fresno[5], '89	P --	P '12	P '11	V '08	V '08	V '02	V '09
Fullerton, '93	P '09	P '09	----------	V '08	V '08	V --	----------
Galt, '12	P '15	----------	----------	V '12	V '12	V --	----------
Geyserville, '15	*	*	*	*	*	*	*
Gilroy, '78	P '12	----------	----------	V --	V --	V '10	----------
Glendale, '01	P '14	P '14	P''14	V '11	V '11	V '10	V '11
Gonzales, '08	----------	----------	----------	----------	V '14	V '10	----------
Grass Valley, '02	----------	----------	----------	----------	----------	V '02	----------
Gridley, '92	P --	----------	----------	V '10	V '10	V '10	----------
Gustine, '13	P '15	----------	----------	V '15	V '15	V '13	----------
Half Moon Bay, '09	P --	----------	----------	V '14	V '14	V '13	----------
Hanford, '92	P '14	----------	----------	V '09	V '13	V --	V --
Hayward, '92	P --	P --	----------	V '13	V '13	V --	----------
Healdsburg, '88	P '11	----------	----------	----------	----------	V --	----------
Hemet, '94	P '12	----------	----------	V '13	V '13	V --	V '15
Hollister, '95	P '10	----------	----------	V '16	V '16	V '10	----------
Holtville, '09	P '15	----------	----------	V '15	V '15	V --	V '15
Hughson, '10	P '15	----------	----------	V '15	V '15	V '13	----------
Huntington Beach, '03	P '10	----------	----------	V '10	V '10	V '10	V '11
Huntington Park[6], '09	P '09	P '09	----------	V '09	V '09	V '09	----------
Imperial[7], '06	P '09	P '09	----------	V '09	V '09	V '09	V '09
Inglewood, '05	P '14	P '14	P '14	V '15	V '15	V '05	V '13
Ione, '03	----------	----------	----------	----------	----------	V --	----------
Irwin, '11	P --	----------	----------	----------	V --	V --	----------
Jackson, '11	----------	----------	----------	----------	----------	V --	----------
Julian, '91	----------	----------	----------	----------	----------	V '03	----------
Kerman, '10	----------	----------	----------	V '13	V '13	V '13	V '15
King City, '10	P '14	P '14	P '14	V '11	V '11	V '12	V '13

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*Reports no courses.

[5] Maintains course in automobile mechanics, introduced 1914.

[6] Maintains course in printing, introduced 1914.

[7] Maintains course in auto mechanics.

TABLE I—Continued.

Statistical Report of Manual and Vocational Subjects Taught in California Day High Schools.

Explanation: P indicates that the course is of a prevocational, preparatory, cultural or disciplinary character; V indicates that the course is vocational; S indicates that the course directly supplements a vocation. The number indicates the year the course was introduced.

School and date of establishment	Manual and industrial arts			Household arts		Commercial training for office work	Agriculture, one or more phases
	Wood work	Iron work	Craft work	Science	Art		
Kingsburg, '05	----------	----------	----------	----------	----------	V '07	----------
Lakeport, '01	----------	----------	----------	----------	----------	V '00	----------
Lancaster, '12	P '14	P '14	----------	V '15	V '15	V '13	----------
Laton, '05	----------	----------	----------	V '15	V '15	V '12	V '15
Le Grand, '09	P '12	P '12	----------	V '12	V '12	----------	----------
Lemoore, '02	P '11	----------	----------	V '15	V '15	V '10	V '15
Lincoln, '07	P --	----------	----------	V --	V --	V --	----------
Lindsay, '08	P '15	----------	----------	V '13	V '13	V '08	----------
Livermore, '91	----------	----------	----------	V '10	V '10	V '07	----------
Lodi, '95	P '13	----------	----------	V '13	V '13	V '10	V '13
Lompoc, '90	P '10	----------	----------	V '10	V '10	V --	V '11
Long Beach[8], Polytechnic, '95	PV '11	PV '11	P '11	V --	V --	V '06	----------
Lordsburg, '03	P '12	----------	----------	V '12	V '12	V '04	V '11
Los Angeles—							
Classical, '72	----------	----------	----------	V --	V --	V '96	----------
Gardena, '04	P '11	----------	----------	V --	V --	----------	V '11
Hollywood[9], '03	P '11	P '11	----------	V '08	V '08	V '07	V '10
Lincoln, '13	P --	P --	----------	V --	V --	V --	----------
Manual Arts[10], '11	PV '10	PV '12	P '00	V '10	V '10	V '14	V '15
Owensmouth, '14	----------	----------	----------	V --	V --	V '14	V '14
Polytechnic[11], '06	PV '05	PV '08	P '09	V '12	V '12	V '95	----------
San Pedro[12], '03	PV '13	PV '13	----------	V '11	V '11	V '06	----------
Van Nuys, '14	P --	----------	----------	V '14	V '14	V '14	V '14
Wilmington, '03	P --	----------	----------	V --	V --	V '10	----------
Los Banos, '97	PV '15	----------	----------	V '14	V '14	V '07	----------
Los Gatos, '93	----------	----------	P '13	V --	V --	V '15	----------
Loyalton, '08	*	*	*	*	*	*	*
Madera, '04	P '13	----------	----------	V '13	V '13	V --	----------
Maricopa, '15	P --	----------	----------	V --	V --	----------	----------
Mariposa, '14	----------	----------	----------	----------	----------	V '15	----------
Martinez, '01	P '13	----------	----------	----------	V '12	V '11	----------
Marysville, '72	P --	----------	----------	----------	V '14	V '15	----------
Maxwell, '12	----------	----------	----------	----------	----------	V --	----------
McArthur, '10	#	#	#	#	#	#	#
Merced, '95	P '05	----------	----------	V '13	V '13	V '00	----------
Mendocino, '92	----------	----------	----------	----------	----------	V --	----------
Middletown, '14	----------	----------	----------	----------	----------	V --	----------
Mill Valley, '08	P '13	P '13	----------	V '12	V '12	V '08	----------
Montebello, '10	----------	----------	P --	V --	----------	V '10	----------
Modesto, '00	P '12	----------	----------	V '12	V '12	V --	V '15
Monrovia, '93	P '12	----------	P '12	V '10	V '10	V '14	V '14
Monterey, '00	P '14	----------	----------	V '10	V '10	V --	----------
Morgan Hill, '04	----------	----------	----------	V '13	V '13	V --	----------
Mountain View, '03	P --	----------	----------	V --	V --	V '10	----------
Napa, '97	P '12	----------	----------	V '12	V '12	V --	----------
National, '95	P '11	----------	P '14	V '11	V '11	V '13	----------
Needles, '02	P '11	----------	----------	V '12	V '12	V '14	----------

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*Reports no courses.

#No report.

[8] Maintains courses in auto mechanics and applied elements of architectural engineering, the latter course introduced 1911.

[9] Maintains course in auto mechanics, introduced 1913.

[10] Maintains the following courses: Vocational drawing, introduced 1900; blacksmithing, introduced 1911; auto mechanics, introduced 1913; printing, introduced 1912; vocational guidance, introduced 1914; supplementary chemistry and applied elements of electricity.

[11] Maintains the following courses: Applied elements of civil, mechanical, electrical, and structural engineering; machine design; blacksmithing; applied elements of mining and architecture; salesmanship; advertising; window dressing; millinery; dressmaking; journalism.

[12] Maintains courses in applied elements of mechanical, electrical and marine engineering.

TABLE I—Continued.

Statistical Report of Manual and Vocational Subjects Taught in California Day High Schools.

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School and date of establishment	Manual and industrial arts			Household arts		Commercial training for office work	Agriculture, one or more phases
	Wood work	Iron work	Craft work	Science	Art		
Nevada City[13], '02						V '10	
Newman, '06				V '13	V '13	V '98	
Nordhoff, '09						V '09	
Norwalk, '03			P '11	V '15	V '15	V '10	
Oakdale, '92	P '15			V --	V --	V '10	V '15
Oakland—							
Classical, '67				V '14	V '14	V '15	
Fremont, '05	P --			V '10	V '10	V '06	
Technical[14], '01	PV --	PV --		V --	V --	V --	
University, '14							
Vocational[15], '15	PV '15	PV '15		V '15	V '15	V '15	
Oceanside, '95				V '13	V '13		V
Oleander, '92	P --				V '13	V '04	V '10
Ontario, '11	PV --	PV --		V '09	V '09		V '11
Orange, '03	P '13	P '13	P '13	V --	V --	V '04	
Orland, '95	PV '14			V '15	V '14	V --	
Orosi, '09				V '14	V '14	V '10	V '14
Oroville, '92	P '14		P '14			V --	
Oxnard, '02	P '04			V '13	V '13	V --	
Pacific Grove, '96	P '13		P '13	V '12	V '12	V --	
Palo Alto, '98	P '07		P '07	V '13	V '13	V '11	
Pasadena[16], '92	PV '11	PV '11		V '11	V '11	V '06	V '13
Paso Robles, '93	P '14			V '13	V '13	V --	V --
Patterson, '13	P '14			V '14	V '14	V '14	
Perris, '97	P '11			V '13	V '13		
Petaluma, '73	P '13			V '13	V '13	V '96	
Placerville, '95						V '03	
Point Arena, '04	*	*	*	*	*	*	*
Pomona[17], '89	P '10	P '10		V --	V --	V '98	V '12
Porterville, '96	P '10			V '15	V '15	V '10	V '14
Princeton, '09	P '12			V '15	V '15	V --	V '14
Puente[18], '14	P '15			V '15	V '15	V '15	
Quincy[19], '08					V '15	V --	
Ramona, '06	P '14			V '15	V '15		V '12
Raymond, '15						V --	
Red Bluff, '97	P '08	P '08		V '12	V '12	V '08	
Redding[20], '99	P '09	P '15	P --	V '09	V '07	V --	
Redlands[21], '91	P --	P --		V --	V --	V '15	V --
Redondo, '05	P --			V '10	V '10	V '12	
Redwood City, '95	P '12			V '11	V '11	V '05	
Reedley, '98	P --			V --	V --	V --	
Richmond, '07	P '11	P '11	P '11	V --	V --	V '11	
Rio Vista, '12				V --	V --	V --	
Ripon, '10	*	*	*	*	*	*	*
Riverdale, '12	P '15			V '15	V '15	V --	
Riverside, Polytechnic[22], '11	P '11	P '14				V '11	V '11
Riverside, Girls', '93				V '10	V '10	V '11	
Roseville[23], '12	P '12			V '12	V '12	V --	V --

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*Reports no courses.

[13] Maintains course in vocational drawing.

[14] Maintains courses in dressmaking and applied elements of civil engineering.

[15] Maintains courses in blacksmithing; auto mechanics; printing; applied elements of electricity; salesmanship; millinery; dressmaking; machine and architectural drawing.

[16] Maintains courses in auto mechanics and printing.

[17] Maintains courses in salesmanship and vocational drawing.

[18] Maintains course in library craft.

[19] Maintains course in printing.

[20] Maintains courses in applied elements of electricity and civil engineering.

[21] Maintains course in library craft.

[22] Maintains courses in auto mechanics and printing.

[23] Maintains supplementary course in drawing.

TABLE I—Continued.

Statistical Report of Manual and Vocational Subjects Taught in California Day High Schools.

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School and date of establishment	Manual and industrial arts			Household arts		Commercial training for office work	Agriculture, one or more phases
	Wood work	Iron work	Craft work	Science	Art		
Sacramento[24], '56	PV '14	PV '14		V '15	V '11	V --	
Salinas, '82	P '10			V '11	V '11	V '09	
San Andreas, '05						V '05	
San Diego[25], '87	PV '11	PV '12	PV '12	V '13	V '13	V '00	
San Bernardino[26], '91	P '10	P '10		V '09	V '09	V '07	V '15
San Fernando, '97	P '10		P --	V '12	V '12	V '98	V '11
San Francisco—							
Girls'[27], '64			P --		V '09		
Commerce, '00						V '00	
Lowell, '57	*	*	*	*	*	*	*
Mission[28], '96						V '98	
Polytechnic[29], '92	P --	P --	P '95	V '08	V '08		
San Jacinto, '95	P '13			V '09	V '09	V --	
San Jose[30], '72	PV '08	PV '15	P '09	V '08	V '08	V '04	V '13
San Luis Obispo, '95	P '14			V '14	V '14	V --	
San Mateo[31], '02	P '10		P '10	V '11	V '11	V --	
San Rafael, '88	P --			V --	V --	V '01	
Santa Ana, '89	P --	P --		V --	V --	V --	
Santa Barbara[32], '93	P '11	PV '11		V --	V --	V '05	V '15
Santa Clara, '72	P '13			V '13	V '13	V --	
Santa Cruz, '76	P '10		P '15	V '09	V '09	V '11	V '10
Santa Maria, '91	P '09			V '13	V '13	V '08	
Santa Monica[33], '91	P '11	P --		V '07	V '07	V --	V '13
Santa Paula, '91	P '06			V '14	V '14	V --	
Santa Rosa, '76	P '14		P '14	V '13	V '13	V '09	
Santa Ynez, '91	P '14			V '15	V '15	V '11	
Sanger, '99	P '08			V '12	V '09	V '00	
Sebastopol, '08	P '06			V '15	V '15	V '06	V '15
Selma, '92	P --			V --	V --	V --	V --
Sonoma[34], '91				V '14	V '14	V '07	V '14
Sonora, '03	P '07			V '11	V '11	V --	
South Pasadena, '04	P '09		P '09	V '10	V '10	V --	
South San Francisco, '13						V '13	
St. Helena, '97	P '06			V '13	V '13	V --	V '15
Stockton[35], '70	PV '14	P --		V '14	V '14	V '94	V '10
Susanville, '02	P '14				V '14	V --	V '15
Sutter City, '93	P '14			V '14	V '14	V --	
Sutter Creek, '11	P --					V --	V --
Taft, '15				V '15	V '15	V --	
Tomales, '11	*	*	*	*	*	*	*
Tracy, '12					V '14	V '12	
Truckee, '00	*	*	*	*	*	*	*
Tulare, '91	P '12			V '12	V '12	V '12	V '14
Tuolumne, '11	P --					V --	
Turlock, '06	P '12			V '11	V '11	V '11	V '12
Ukiah, '92	*	*	*	*	*	*	*
Vacaville, '93				V '10	V '10	V --	

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*Reports no courses.

[24] Maintains course in applied elements of electricity.

[25] Maintains courses in auto mechanics; applied elements of electricity and architecture.

[26] Maintains courses in auto mechanics and blacksmithing.

[27] Maintains courses in vocational guidance and millinery.

[28] Maintains courses in dressmaking and millinery.

[29] Maintains courses in applied elements of civil, electrical, mechanical and structural engineering; auto mechanics; supplementary chemistry and physics; vocational drawing.

[30] Maintains course in vocational drawing.

[31] Maintains course in journalism.

[32] Maintains courses in vocational drawing and printing.

[33] Maintains course in auto mechanics.

[34] Maintains course in vocational guidance.

[35] Maintains course in vocational drawing.

TABLE I—Continued.

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School and date of establishment	Manual and industrial arts			Household arts		Commercial training for office work	Agriculture, one or more phases
	Wood work	Iron work	Craft work	Science	Art		
Vallejo[36], '70	----------	----------	----------	V '11	V '11	V '08	----------
Venice, '11	P '11	P '11	P '11	V '11	V '11	V '11	V '14
Ventura[37], '89	PV '07	----------	----------	V '10	V '10	V --	V '11
Victorville, '15	*	*	*	*	*	*	*
Visalia, '91	P '12	----------	----------	V '12	V '12	V '06	V '14
Wasco, '15	PV --	----------	----------	V '15	V '15	----------	V '15
Watsonville, '90	P '11	----------	----------	V '09	V '09	VS '95	----------
Weaverville, '09	P '10	----------	----------	----------	----------	V '10	----------
Westwood, '14	P '14	----------	----------	----------	----------	V '14	----------
Wheatland, '07	P '14	----------	----------	----------	V '14	V --	----------
Whittier, '04	P '10	----------	----------	V '10	V '10	V --	V '10
Williams, '09	P '11	----------	----------	V '13	V '13	V '11	----------
Willits, '04	----------	----------	----------	----------	V '15	----------	----------
Willows, '01	P '10	----------	----------	V '15	V '15	V '00	----------
Winters, '02	----------	----------	----------	----------	----------	V --	----------
Woodlake, '14	----------	----------	----------	----------	----------	V '14	----------
Woodland, '95	P --	----------	----------	V --	V --	V --	----------
Yreka[38], '93	P '10	P '15	----------	V '10	V '10	V '08	V '14
Totals ---------- 267	185	46	31	192	204	232	73
Total districts ----- 249	176	41	29	180	191	219	69

*Reports no courses.

[36] Maintains courses in applied elements of civil and structural engineering and electricity; auto mechanics.

[37] Maintains course in vocational drawing.

[38] Maintains course in auto mechanics.

SUMMARY OF TABLE I.

Showing Number of High Schools and Number of Special Courses Established During Each Biennial Period Since That Ending 1894.

Period ending	High schools	Wood work	Iron work	Craft work	Domestic science	Domestic art	Commercial office training	Agriculture
1894	*72	----------	----------	----------	----------	----------	1	----------
1896	19	----------	----------	1	----------	----------	3	----------
1898	14	----------	----------	----------	----------	----------	2	----------
1900	10	----------	----------	1	----------	----------	4	----------
1902	15	----------	----------	----------	----------	----------	7	----------
1904	26	----------	----------	----------	----------	----------	4	----------
1906	17	3	----------	----------	----------	----------	10	----------
1908	10	6	----------	1	1	2	15	----------
1910	25	14	6	3	19	19	17	2
1912	21	43	10	7	35	37	31	15
1914	18	36	7	6	52	54	23	14
1916	20	44	12	7	56	63	26	31
Total schools reporting to date	267	146	35	26	163	175	143	62
Totals schools maintaining courses	----------	185	46	31	192	204	232	73

*Established during entire period prior to date.

TABLE II.

Statistical Report Relating to Manual and Industrial Courses in California Day High Schools.

Explanation: P indicates that the course is of a prevocational, preparatory, cultural or disciplinary character; V indicates that the course is vocational; S indicates that the course directly supplements a vocation. The number indicates the year the course was introduced.

School	Woodwork			Ironwork		Art crafts	
	Bench cabinet	Turning	Pattern making	Forging	Machine shop	Metal	Leather
Alameda[1]	P '12	P '12	P '12	P '14		P '03	P '03
Alhambra	P '11			P '11	P '11		
Alturas	P '14						
Anaheim	P '14						
Anderson[2]	PS '15						
Antioch	P '12						
Auburn	P '12					P '12	P '12
Azusa	P '10	P '10					
Bakersfield	P --		P --	P --	P --		
Benicia[3]	PV '13						
Berkeley[4]	V '09		P '09				P '11
Biggs	P '13						
Bishop	P '15						
Bostonia	P --						
Brawley	P '09						
Brentwood	P --						
Burbank	P '11						
Calexico	P '13		P --				
Campbell	P '12	PS '12					
Carpinteria	P '15						
Cedarville	P '14						
Centerville[5]	P '11						
Ceres	P '14						
Chico	P '11						
Chino	P '11						
Claremont	P '10						
Clovis	P '14						
Coachella	P '13						
Coalinga	P '13						
College City	P '13						
Colton	P '14	P '14			P '14		
Colusa	P --		P --		P --		
Compton	P '09			P --		P --	
Concord	P '13						
Corcoran	P --						
Corona	P '11						
Coronado	P '14	P '14	P '14	P '14	P '14		
Covelo	PS '15						
Covina[6]	P '09	P '09					
Crescent City	P '15						
Crockett	P '13						
Delano	P --						
Dinuba	P '09						
Downey	P '14						
El Centro	P --						
Elk Grove	P '14						
El Monte	P '15						
Escondido[7]	P '10	P '10					
Esparto	P '16						
Etna Mills[8]	PS '15			P '15			
Eureka	P '09						

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[1] Maintains courses in foundry, electricity and applied elements of civil engineering.

[2] Maintains courses in concrete work, plumbing and pipe cutting.

[3] Maintains course in applied elements of civil engineering.

[4] Maintains courses in bookbinding, clay modeling and wood block printing.

[5] Maintains course in printing.

[6] Maintains course in plumbing.

[7] Maintains course in blacksmithing.

[8] Maintains course in harness mending.

TABLE II—Continued.

Statistical Report Relating to Manual and Industrial Courses in California Day High Schools.

Explanation: P indicates that the course is of a prevocational, preparatory, cultural or disciplinary character; V indicates that the course is vocational; S indicates that the course directly supplements a vocation. The number indicates the year the course was introduced.

School	Woodwork			Ironwork		Art crafts	
	Bench cabinet	Turning	Pattern making	Forging	Machine shop	Metal	Leather
Exeter	P '11						
Fairfield	PV '12					P '15	
Fillmore	P '11	P '11					
Fowler	P --						
Fresno[9]	P '12			P '12	P '12		
Fullerton[10]	P '09	P '09		P '09	P '09		
Galt	P '15						
Gilroy	P '12						
Glendale[11]	P '14			P '14	P '14		
Gridley	P --						
Gustine	P '15						
Half Moon Bay	P --						
Hanford	P '14						
Hayward	P --			P --			
Healdsburg	P '11						
Hollister	P '10						
Holtville	P '15						
Hughson	P '15						
Huntington Beach	P '10						
Huntington Park[12]	P '09				P '09		
Imperial[13]	P '09				P '09		
Inglewood[14]	P '14	P '14	P '14	P '14		P '14	P '14
Irwin	P --						
King City[15]	P '14			P '15		P '14	
Lancaster	P '14					P '15	
Le Grand	P '12		P '12	P '12			
Lemoore	P '11						
Lincoln	P --						
Lindsay	P '15						
Lodi	P '13						
Lompoc	P '10	P '10					
Long Beach, Polytechnic[16]	PV '11	P '11	P '11	P '11	PV '11		
Lordsburg	P '12						
Los Angeles—							
Gardena	P '11						
Hollywood[17]	P '09			P '11	P '11		
Lincoln[18]	P --			P --			
Manual Arts[19]	P '10				P '12	P '00	
Polytechnic[20]	PV '05	PV '05	PV '06	P '06	P '08		
San Pedro[21]	PV '13		PV '13	PV '13	PV '13		
Van Nuys	P --						
Wilmington	P --						
Los Banos	PV '15						
Los Gatos						P '13	
Madera	P '13				P '13		
Maricopa	P --						

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[9] Maintains course in auto mechanics.

[10] Maintains course in cement work.

[11] Maintains course in concrete pottery.

[12] Maintains course in printing.

[13] Maintains course in automobile mechanics.

[14] Maintains course in pottery.

[15] Maintains courses in farm mechanics, concrete and plumbing.

[16] Maintains course in automobile mechanics.

[17] Maintains courses in foundry and automobile mechanics.

[18] Maintains courses in foundry, electricity and automobile mechanics.

[19] Maintains courses in pottery, printing, automobile mechanics, electricity and blacksmithing.

[20] Maintains courses in applied elements of mining, structural, electrical, mechanical, and civil engineering; architecture; machine design.

[21] Maintains courses in applied elements of marine, mechanical and electrical engineering.

TABLE II—Continued.

Statistical Report Relating to Manual and Industrial Courses in California Day High Schools.

Explanation: P indicates that the course is of a prevocational, preparatory, cultural or disciplinary character; V indicates that the course is vocational; S indicates that the course directly supplements a vocation. The number indicates the year the course was introduced.

School	Woodwork			Ironwork		Art crafts	
	Bench cabinet	Turning	Pattern making	Forging	Machine shop	Metal	Leather
Martinez	P '13	---------	---------	---------	---------	---------	---------
Marysville	P --	---------	---------	---------	---------	---------	---------
Merced	P '05	---------	---------	---------	---------	---------	---------
Mill Valley	P --	P --	---------	P '13	P '13	---------	---------
Modesto	P '12	---------	---------	---------	---------	---------	---------
Monrovia	P '12	---------	---------	---------	---------	P --	---------
Monterey	P '14	---------	---------	---------	---------	---------	---------
Mountain View	P --	---------	---------	---------	---------	---------	---------
Napa	P '12	---------	---------	---------	---------	---------	---------
National City	P '11	---------	---------	---------	---------	P '14	P '14
Needles	P '11	---------	---------	---------	---------	---------	---------
Norwalk[22]	---------	---------	---------	---------	---------	---------	---------
Oakland—							
Fremont	P --	---------	---------	---------	---------	---------	---------
Technical	PV --	---------	PV --	P --	P --	---------	---------
Vocational[23]	PV '15	---------	PV --	P '15	P '15	---------	---------
Oleander	P --	---------	---------	---------	---------	---------	---------
Ontario	PV --	P --	P --	---------	PV --	---------	---------
Orange	P '13	P --	---------	P '13	---------	P '13	P '13
Orland	PV '15	---------	---------	---------	---------	---------	---------
Oroville	P '14	---------	---------	---------	---------	P '14	P '13
Oxnard	P '04	P '04	---------	P '15	---------	---------	---------
Pacific Grove	P '13	---------	---------	---------	---------	P '13	---------
Palo Alto	P '07	---------	---------	---------	---------	P '07	---------
Pasadena[24]	PV '11	PV '11	PV '11	PV '11	PV '11	---------	---------
Paso Robles	P '14	---------	---------	---------	---------	---------	---------
Patterson	P '14	---------	---------	---------	---------	---------	---------
Perris	P '11	---------	---------	---------	---------	---------	---------
Petaluma	P '13	---------	P '13	---------	---------	---------	---------
Pomona	P '10	---------	P '10	P '10	P '10	---------	---------
Porterville	P '10	---------	---------	---------	---------	---------	---------
Princeton	P '12	---------	---------	---------	---------	---------	---------
Puente[25]	P '15	---------	---------	---------	---------	---------	---------
Ramona	P '14	---------	---------	---------	---------	---------	---------
Red Bluff	P '08	P '08	---------	---------	P '08	---------	---------
Redding[26]	P '09	P '09	---------	---------	P '15	P --	P --
Redlands	P --	---------	---------	---------	P --	---------	---------
Redondo	P --	---------	---------	---------	---------	---------	---------
Redwood City	P '12	---------	---------	---------	---------	---------	---------
Reedley	P --	---------	---------	---------	---------	---------	---------
Richmond	P '11	---------	P '11	P '11	---------	P '11	---------
Riverdale	P '15	---------	---------	---------	---------	---------	---------
Riverside, Polytechnic[27]	P '11	P '11	P '11	---------	PV '14	---------	---------
Roseville	P '12	---------	---------	---------	---------	---------	---------
Sacramento[28]	PV '14	---------	PV '14	PV '14	PV '14	---------	---------
Salinas	P '10	---------	---------	---------	---------	---------	---------
San Bernardino[29]	P '10	---------	---------	P '10	P '10	---------	---------
San Diego[30]	PV '11	---------	P '11	P '12	PV '12	P '12	P '12
San Fernando	P '10	---------	---------	---------	---------	P --	---------

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[22] Maintains course in clay modeling.

[23] Maintains courses in machine design, blacksmithing, auto mechanics, electric wiring and printing.

[24] Maintains courses in printing, machine design, automobile mechanics.

[25] Maintains course in printing.

[26] Maintains course in electricity.

[27] Maintains courses in printing, tool making, automobile mechanics.

[28] Maintains course in electrical construction.

[29] Maintains courses in blacksmithing and auto mechanics.

[30] Maintains courses in electricity, foundry, architecture, clay modeling, cement pottery, bookbinding and auto mechanics.

TABLE II—Continued.

Statistical Report Relating to Manual and Industrial Courses in California Day High Schools.

Explanation: P indicates that the course is of a prevocational, preparatory, cultural or disciplinary character; V indicates that the course is vocational; S indicates that the course directly supplements a vocation. The number indicates the year the course was introduced.

School	Woodwork			Ironwork		Art crafts	
	Bench cabinet	Turning	Pattern making	Forging	Machine shop	Metal	Leather
San Francisco—							
Girls'[31]							P --
Polytechnic[32]	P --				P --	P '95	P '95
San Jacinto	P '13						
San Jose[33]	P '08	P '08	P '08		P '15	P '09	
San Luis Obispo	P '14						
San Mateo[34]	P '10	P '10	P '10			P '10	
San Rafael	P --						
Santa Ana	P --				P --		
Santa Barbara[35]	P '11	P '11	P '11	V '11	V '11		
Santa Clara	P '13						
Santa Cruz	P '10					P '15	P '15
Santa Maria	P '09						
Santa Monica[36]	P '11		P '11	P '11	P '11		
Santa Paula	P '06						
Santa Rosa	P '14					P '14	
Santa Ynez	P '14						
Sanger	P '08						
Sebastopol	P '06						
Selma	P --						
Sonora	P '07	P '07					
South Pasadena	P '09	P '09					
St. Helena	P '06						
Stockton	PV '14	P '15			P '15		
Susanville	P '14						
Sutter	P '14	P '14					
Sutter Creek	P '14						
Tulare	P '12			P '12			
Turlock	P '12						
Venice[37]	P '13		P '13	P '11		P '11	P '11
Ventura	PV '07		PV '07				
Visalia	P '12						
Wasco	PV --						
Watsonville	P '11						
Weaverville	P '10						
Westwood	P '14						
Wheatland	P '14						
Whittier	P '10						
Williams	P '11						
Willows	P '10						
Woodland	P --						
Yreka[38]	P '10					P '15	
Totals	185	28	27	29	35	26	13

[31] Maintains course in pottery.

[32] Maintains courses in clay modeling, concrete pottery, applied elements of civil, mechanical and structural engineering, electricity and automobile mechanics.

[33] Maintains courses in wood carving and bookbinding.

[34] Maintains course in printing.

[35] Maintains courses in printing and bookbinding.

[36] Maintains course in automobile mechanics.

[37] Maintains courses in automobile mechanics, foundry, printing and plumbing.

[38] Maintains course in automobile mechanics.

TABLE III.

Statistical Report Relating to Agricultural Courses in California Day High Schools.

X indicates that subject is taught.

School	Date established	Length of course, unit years	Open to grade	Teacher		Practical work		Agronomy or gen. farm.	Animal husbandry	Dairying	Farm mechanics	Horticulture	Plant propagation	Soils	Farm managem't.	Science supplem'tary	Market gardening
				Form of experience	Certificate	Home	School										
Anderson	1916	½	9-12	Farm	Reg. and spec.	X	X		X								
Arcata		1	10-12	Farm	Reg.	X		X									
Bakersfield	1911	4	9-12	Farm	Reg.	X	X		X	X			X				X
Bishop	1915	4	9-12	None	Reg.	X				X							X
Boonville	1915	1	9-12	Farm	Reg.	X	X	X	X							X	
Cedarville	1914	4	9-12	Farm	Reg.	X	X	X	X	X	X	X		X			
Centerville	1912	4	9-12	Farm	Spec.	X	X	X	X	X							
Chico	1912	4	11-12, ungraded	Farm	Reg.	X		X	X	X		X					X
Crescent City	1915	4	9-12	Farm	Spec.	X	X	X	X	X	X				X	X	X
Dos Palos	1915	1	9-12	Farm	Reg.		X	X		X			X				X
El Centro		1	Ungraded	Farm	Reg.	X	X	X									
Elk Grove	1912	2	9-12	Farm	Reg.	X	X			X		X		X			
Etna Mills	1913	1	9-12	Farm	Reg.		X		X	X	X		X	X			
Ferndale	1913	4	9-12	Farm	Spec.		X	X	X	X					X	X	
Fresno	1909	4	9-12	Farm	Spec.		X	X	X	X	X	X		X			
Glendale	1911	1	10-12	Farm	Reg.		X	X					X				
Hanford		1	9 and 10	Farm	Reg.		X	X								X	X
Hemet	1915	4	9-12, ungraded	Farm	Spec.		X					X				X	
Holtville	1915	4	9-12	Farm	Reg.	X	X	X	X		X						
Huntington Beach	1911	4	9-12	Farm	Reg.	X	X	X					X				X
Imperial	1909	4	9-12, ungraded	Farm	Reg.	X	X		X	X	X			X	X	X	
Inglewood	1913	3	9-12, ungraded	Farm	Spec.	X	X		X	X	X	X				X	X
Kerman	1914	1	9-12	None	Reg.		X	X	X	X		X					
King City	1913	1	9-12, ungraded	State of Cal.	Spec.		X		X	X	X						
Laton	1915	1	9-12	None	Reg.	X	X	X				X					
Lemoore	1914	1	9-12, ungraded	Farm	Reg.	X	X			X		X		X			
Lodi	1913	4	9-12	None	Reg.		X					X				X	
Lompoc	1911	1	9-12	Dept. Interior	Reg.		X	X					X				
Lordsburg	1911	1	12	Farm	Reg.		X	X				X	X				
Los Angeles—																	
Gardena	1911	3	9-12	Farm	Reg.		X	X	X	X	X	X	X		X		
Hollywood	1910	1	9-12	Farm	Reg.	X	X	X					X				
Lincoln	*	*	*	*	*	*	*	X	*	*	*	*	*	*	*	*	*
Manual Arts	1915	3	9-12	None	Spec.		X	X						X			

Owensmouth		4	9-12	Farm	Reg.		X	X									
Van Nuys	1914	4	9-12, ungraded	Farm	Spec.	X	X	X				X					
Modesto	1915	4	9-12	Farm	Reg.	X	X	X	X			X	X			X	
Monrovia	1914	3	9-12	Farm	Reg.	X	X	X	X	X		X					
Oakdale	1915	1	9-12, ungraded	None	Spec.		X	X		X				X			X
Oceanside		1	9-12	Farm	Spec.	X	X	X				X	X				
Oleander	1910	2	9-12	Farm	Reg.	X	X	X				X[1]					
Ontario	1911	4	9-12	Farm	Reg.		X					X		X	X	X	
Orosi	1914	2	9-12	Farm	Reg.	X	X	X									
Pasadena	1913	4	9-12	Farm	Reg.	X	X		X	X		X			X		
Paso Robles		1	9-12, ungraded	Farm	Reg.	X	X	X					X				
Pomona	1912	4	9-12	Farm	Reg.		X				X	X			X		
Porterville		1	10-12	Farm	Reg.		X					X					
Princeton	1914	1	9-12	None	Reg.		X	X		X		X					
Ramona	1912	1	9-12	None	Reg.	X	X		X					X			
Redlands		1	9-12	Farm	Reg.	X	X	X									
Riverside	1911	4	9-12, ungraded	Farm	Reg.		X	X									
San Bernardino	1915	4	9-12	Farm	Reg.		X						X				
San Fernando	1911		10-12	Farm	Reg.	X	X	X									
San Jose	1913	3⅓	9-12	Farm	Spec.		X	X	X	X		X			X		X
Santa Barbara	1915	2	9-12	Farm	Spec.	X	X	X								X	
Santa Cruz	1910	2	9-12	Dept. Interior	Spec.		X	X				X	X				
Santa Monica	1913		9-12	None	Reg.	X	X							X			X
Sebastopol	1915	4	9-12	Farm	Reg.	X	X				X	X		X	X		X
Sonoma	1914		9-12				X	X									
St. Helena	1911	2	9-12	Farm	Reg.	X	X	X				X					X
Stockton	1910	4	9-12	Farm		X	X	X	X		X	X		X			
Susanville	1915	½	9-12		Reg.		X		X		X						
Sutter Creek	1914	1	9-12, ungraded	Farm	Spec.		X	X									
Tulare	1914	2	9-12	Farm	Reg.	X	X	X	X	X							
Turlock	1912	2	9-12, ungraded	Farm	Spec.	X	X	X	X		X						
Venice	1914	4	9-12		Spec.	X	X	X			X						
Ventura	1911	3	9-12	Farm	Reg.	X	X	X					X			X	
Visalia	1914	4	9-12		Spec.		X	X	X		X	X				X	
Wasco	1915	2	9-12		Reg. and spec.	X	X	X				X					
Whittier	1910	2	9-12	Farm	Reg.		X		X			X		X			
Yreka		2	9-12, ungraded	Farm	Reg.		X		X				X	X			

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*Not given.

[1] Oleander maintains course in Viticulture.

TABLE IV.

Statistical Report of Manual and Vocational Subjects Taught in Intermediate Day Schools That Maintain Ninth Grades.

Explanation: P indictes that the course is of a prevocational, preparatory, cultural or disciplinary character; V indicates that the course is vocational; S indicates that the course directly supplements a vocation. The number indicates the year the course was introduced.

School	Manual and industrial arts			Household arts		Commercial training for office work	Agriculture, one or more phases
	Woodwork	Ironwork	Craft work	Science	Art		
Berkeley—							
Edison[1]	P '16			V '11	V '11	V '14	
Burbank	P '11			V '11	V '11	V '11	
McKinley	P '07			V '07	V '07		
Fresno—							
Longfellow	P --			V --	V --		
Los Angeles—							
Berendo	P --			V '11	V '11	P '11	
Custer	P '11			V '11	V '11	P '11	
Fourteenth Street	P --			V --	V --	P --	
McKinley	P '12			V '12	V '12	P '12	
Sentous[2]	P --			V --	V --	P --	
Thirtieth Street	P --			V --	V --	P --	
Virgil	PV --			V --	V --	P --	
Oakland—							
University							
Pomona—							
Hamilton	P --			V --	V --		
Washington	P --			V --	V --		
Stockton—							
Prevocational[3]	PV --	P --					

[1] Maintains course in printing, introduced 1911.
[2] Maintains course in printing.
[3] Maintains course in printing.

TABLE V.

Statistical Report of Certain Manual and Vocational Subjects Taught in California Secondary Evening Schools (a number of these schools reported as Elementary).

Explanation: P indicates that the course is of a prevocational, preparatory, cultural or disciplinary character; V indicates that the course is vocational; S indicates that the course directly supplements a vocation. The number indicates the year the course was introduced.

School	Manual and industrial arts				Household arts		Dress-making	Millinery	Drawing	Office work	Applied sciences	Elements of applied engineering					
	Wood shop	Machine shop	Black-smithing	Auto mech.	Science	Art						Civil	Mechanical	Electrical	Marine	Structural	Architectl.
Alameda										VS '11							
Antioch									S '14								
Gilroy	VS '15								P --	VS '15							
Imperial				V '13						VS '15							
Kerman[1]						VS '16											
Long Beach[2]	VS '13	VS '13		VS '13	VS '13	VS '13			PVS'13	VS --	S --						
Los Angeles—																	
Classical[3]	VS '13				VS '12	VS '12			VS '13	VS '11	S --						
Polytechnic[4]	VS --	VS --	VS --	VS --	VS --	VS --	VS --	VS --	PVS--	VS --	PVS--	V --		VS --	V --	VS --	VS --
San Pedro	VS --	VS --			VS --	VS --				VS --							
Marysville										VS '15							
Oakland Central									P --	VS '04							
Ontario					VS '13	VS '13											
Pomona	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Redlands		VS '14		VS '14													
Rio Vista					VS --												
Sacramento[5]	VS '14	VS '14			VS '14	VS '14		VS --	VS '10	VS '10				VS '14			
San Diego	VS '16			VS '16			VS '16	PVS '16	VS '16	VS '16				VS '16			
San Francisco—																	
Commercial										VS '92							
Bernal					VS '12	VS '12	VS '16	VS '12									
Hamilton								VS --									
Humboldt[6]									VS '97	VS --	S '97	V '97	V '97	V '97	V '97	V '97	V '97
Irving Scott							VS '13	VS '13									
Jean Parker						VS --		VS --									
North Beach									P --	VS --							
San Jose	VS '14	VS '14			VS '14	VS '14			VS '14	VS '14							
San Mateo	VS --									VS --							
Santa Monica	VS '13	VS '13		VS '13	VS '13	VS '13				VS '13							
Tulare										VS '16							
Venice	VS '15	VS '15		VS --	VS '15	VS '15	V --		S --	VS '15							
Westwood										VS --							

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[1] Maintains course in supplementary agriculture, introduced 1916. [2] Maintains course in manual art. [3] Maintains course in bookbinding. [4] Maintains courses in manual art, assaying, salesmanship, advertising, agriculture, telegraphy, nursing. [5] Maintains course in manual art. [6] Maintains course in navigation.

*No report.

TABLE VI.

Statistical Report Relating to Manual and Vocational Subjects Taught in Elementary Schools with Grades Above the Sixth, in Cities Having Superintendents.

Explanation: P indicates that the course is of a prevocational, preparatory, cultural or disciplinary character; V indicates that the course is vocational.

City district	Manual training	Household arts		Commercial	Agriculture	Miscellaneous
		Science	Art			
Alameda	P	V	V			
Bakersfield		V	V			
Berkeley	P	V	V	P		P Printing
Chico	P	V	V			
Eureka	P	V	V			
Fresno	P	V	V	P		
Long Beach	P	V	V			P Printing
Los Angeles[2]	P	V	V	P	P	Foot note.
Marysville	P					
Modesto	P	V	V			
Oakland	P	V	V	P	P	
Oroville	*	*	*	*	*	*
Palo Alto	P	V	V			
Pasadena	P	V	V		P	
Pomona	P	V	V			
Richmond	P	V	V			
Riverside	P	V	V			
Sacramento	P	V	V			
Salinas	P	V	V			
San Bernardino[2]	P	V	V			Foot note.
San Diego	P	V	V			
San Francisco	P	V	V	P		
San Jose	P	V	V		P	P Electricity
San Luis Obispo	P	V	V			
San Rafael	P		V			
Santa Ana	P	V	V			
Santa Barbara	P	V	V	P		
Santa Cruz	P	V	V			
Santa Monica	P	V	V		P	
Santa Rosa	#	#	#	#	#	#
Stockton	P	V	V			
Vallejo	P	V	V		P	
Ventura	P		V			
Total 33	30	28	29	6	6	

Of the above 33 school districts one did not report and one reported no courses.

[2] Maintains courses in concrete work, printing and shoe cobbling.

*Reports no courses.

#No report.

TABLE VII.

Statistical Report Relating to Manual and Vocational Subjects Taught in Elementary Schools in Rural Districts Having Six or More Teachers.

Explanation: P indicates that the course is of a prevocational, preparatory, cultural or disciplinary character; V indicates that the course is vocational.

Rural district	Manual training	Household arts		Commercial	Agriculture	Miscellaneous
		Science	Art			
Alameda County—						
Albany	P		V			
Centerville	P	V				
Emeryville	P		V			
Hayward	*	*	*	*	*	*
Livermore		V	V			
Niles	P		V			
Pleasanton				P		Post G. Ele.
San Leandro	P	V	V		P	
San Lorenzo	*	*	*	*	*	*
Amador County—						
Jackson	*	*	*	*	*	*
Sutter Creek	*	*	*	*	*	*
Butte County—						
Biggs	P		V			
Gridley	*	*	*	*	*	*
Colusa County—						
Colusa					P	
Contra Costa County—						
Antioch	P		V			
Carquinez	P		V			
Concord	P		V			
Martinez	*	*	*	*	*	*
Pinole-Hercules	*	*	*	*	*	*
Pittsburg	P	V	V			
Del Norte County—						
Crescent	*	*	*	*	*	*
El Dorado County—						
Placerville	*	*	*	*	*	*
Fresno County—						
Clovis	P	V			P	
Coalinga	P					
Fowler	P		V			
Fresno Colony					P	
Kingsburg	*	*	*	*	*	*
Parlier	P	V	V		P	
Reedley	P	V	V			
Sanger	#	#	#	#	#	#
Selma	P		V			
Glenn County—						
Orland	*	*	*	*	*	*
Humboldt County—						
Arcata	P		V			
Ferndale	P		V			
Fortuna	*	*	*	*	*	*
Imperial County—						
Calexico	P	V	V			
Inyo County—						
Bishop	P	V	V			
Kern County—						
Aztec	*	*	*	*	*	*
Conley	*	*	*	*	*	*
Midway	P	V	V			
Paleto (Maricopa)	P	V				
Wasco	P		V			
Kings County—						
Corcoran	P		V			
Lemoore	P		V		P	
Lassen County—						
Susanville	P		V			
Westwood	P			P		

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*Reports no courses.

#No report.

TABLE VII—Continued.

Statistical Report Relating to Manual and Vocational Subjects Taught in Elementary Schools in Rural Districts Having Six or More Teachers.

Explanation: P indicates that the course is of a prevocational, preparatory, cultural or disciplinary character; V indicates that the course is vocational.

Rural district	Manual training	Household arts		Commercial	Agriculture	Miscellaneous
		Science	Art			
Los Angeles County—						
Azusa	P	V	V	P		
Burbank	*	*	*	*	*	*
Claremont	P	V	V			
Clearwater	P	V	V		P	
Downey	*	*	*	*	*	*
Eagle Rock	P		V		P	
East Whittier	P	V	V			
El Monte					P	
El Segundo	*	*	*	*	*	*
Glendora	P	V	V			
Graham	P					
Hawthorne	*	*	*	*	*	*
Hermosa Beach[1]	P	V				
Huntington Park	*	*	*	*	*	*
Jefferson	*	*	*	*	*	*
Lordsburg	P					
Montebello	P		V		P	
San Dimas	P		V			
Sierra Madre	P	V	V		P	
Somerset		V	V			
Tropico	*	*	*	*	*	*
Willowbank	#	#	#	#	#	#
Madera County—						
Madera	P		V		P	
Marin County—						
Fairfax			V			
Kentfield	P		V			
Larkspur	#	#	#	#	#	#
Mill Valley	P	V	V			
San Anselmo	P		V			
Sausalito	P	V	V			
Mendocino County—						
Fort Bragg	P		V			
Ukiah	P		V			
Willits	*	*	*	*	*	*
Riverside County—						
Banning	*	*	*	*	*	*
Beaumont	*	*	*	*	*	*
Corona	P	V	V			
Elsinore			V			
Hemet	P		V			
Perris	P	V	V			
San Jacinto	*	*	*	*	*	*
West Riverside	P		V			
Sacramento County—						
Galt	*	*	*	*	*	*
San Juan	*	*	*	*	*	*
San Benito County—						
Hollister	P	V	V			
San Bernardino—						
Chino	P	V	V			
Colton	P	V	V			
Highland	P	V	V			
Mission	P	V	V		P	
Upland	P	V	V			
San Diego—						
Chula Vista		V	V			
East San Diego	P	V	V		P	
Normal Heights	*	*	*	*	*	*

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*Reports no courses.

#No report.

[1] Teaches shoe cobbling.

TABLE VII—Continued.

Statistical Report Relating to Manual and Vocational Subjects Taught in Elementary Schools in Rural Districts Having Six or More Teachers.

Explanation: P indicates that the course is of a prevocational, preparatory, cultural or disciplinary character; V indicates that the course is vocational.

Rural district	Manual training	Household arts		Commercial	Agriculture	Miscellaneous
		Science	Art			
San Joaquin County—						
Lodi	*	*	*	*	*	*
Tracy	*	*	*	*	*	*
San Mateo County—						
Burlingame	P		V			
Jefferson District	*	*	*	*	*	*
Jefferson-Colusa	*	*	*	*	*	*
Jefferson-Vista Grande	*	*	*	*	*	*
San Bruno	*	*	*	*	*	*
South San Francisco	P		V			
Santa Barbara County—						
Carpinteria	P					
Lompoc	P		V	P	P	
Santa Monica	P	V	V			
Santa Clara County—						
Campbell	P					
Gilroy	P	V	V			
Hester	P	V	V	P		
Los Gatos	P	V	V			
Live Oak	*	*	*	*	*	*
Mayfield	P	V	V		P	
Mountain View	#	#	#	#	#	#
Santa Clara	P	V	V			
Sunnyvale	P	V	V		P	
Sunol	P					
Willow Glen	P					
Santa Cruz County—						
Soquel	P				P	
Shasta County—						
Redding	*	*	*	*	*	*
Siskiyou County—						
Dunsmuir	*	*	*	*	*	*
Solano County—						
Fairfield	#	#	#	#	#	#
Vacaville	P		V			
Sonoma County—						
Sebastopol	*	*	*	*	*	*
Merced County—						
Dos Palos	*	*	*	*	*	*
Los Banos	P	V	V			
Merced	P		V			
Modoc County—						
Alturas	*	*	*	*	*	*
Monterey County—						
Monterey	P	V	V			
Pacific Grove	P	V	V			
Napa County—						
Napa	P	V	V			
St. Helena		V	V			
Nevada County—						
Grass Valley	P	V	V			
Orange County—						
Anaheim	P	V	V		P	
El Modeno	P	V	V			
Fullerton	#	#	#	#	#	#
Garden Grove	#	#	#	#	#	#
Huntington Beach	P	V	V		P	
Olinda	P		V			
Placentia	P	V	V			
Randolph District (at Brea)	P		V			
Tustin	P		V			

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*Reports no courses.
#No report.

TABLE VII—Continued.

Statistical Report Relating to Manual and Vocational Subjects Taught in Elementary Schools in Rural Districts Having Six or More Teachers.

Explanation: P indicates that the course is of a prevocational, preparatory, cultural or disciplinary character; V indicates that the course is vocational.

Rural district	Manual training	Household arts		Commercial	Agriculture	Miscellaneous
		Science	Art			
Placer County—						
Auburn	*	*	*	*	*	*
Lincoln			V		P	
Roseville	P			V		Post G. Eve.
Stanislaus County—						
Bonita	*	*	*	*	*	*
Ceres	P	V	V			
Denair	P				P	
Hughson	#	#	#	#	#	#
Newman		V	V			
Oakdale	P		V		P	
Patterson	P	V	V		P	
Sutter County—						
Yuba	*	*	*	*	*	*
Tehama County—						
Corning			V			
Red Bluff		V	V			
Tulare County—						
Dinuba	P		V			
Exeter	P	V				
Lindsay	P	V	V			
Porterville	#	#	#	#	#	#
Tulare	*	*	*	*	*	*
Tipton-Lindsay	P	V	V			
Tuolumne County—						
Sonora	*	*	*	*	*	*
Summerville	P					
Ventura County—						
Fillmore	#	#	#	#	#	#
Oxnard	P		V			
Santa Paula	P	V	V			
Yolo County—						
Winters	*	*	*	*	*	*
Yuba County—						
Marysville	P		V			
Total 169	99	55	92	5	23	

*Reports no courses.
#No report.
Of the above 169 schools 11 did not report and 40 reported no courses.

VOCATIONAL TRAINING IN EVENING SCHOOLS.

For many years two evening high schools of this state have been devoting themselves to the problem of providing an education that would meet the occupational needs of the men and women workers of their respective communities. The Humboldt school of San Francisco, established 1897, and the Polytechnic evening school of Los Angeles, established 1906, have from the first sought to maintain courses of instruction that would either prepare students directly for vocations or supplement the training they were receiving as apprentices or journeymen workers. Most of the other evening schools, secondary and elementary, have up to the last two or three years concerned themselves only with the common branches of the elementary school, and have therefore generally ministered only to the needs of the illiterate of their communities. Within the last three years the evening schools generally have expanded their programs by introducing household arts, commercial, and industrial courses.

A few years ago when the new student entered the evening school he was assigned to an arithmetic, writing, reading, or grammar class, regardless of his educational qualifications and his real needs. Even later when science, drawing and certain of the manual arts had been introduced, the courses provided in these subjects were of an elementary and scholastic character only, and no attempt was made to connect the work with the immediate need of the student. Today the modern evening school considers this need and provides class or, when necessary, individual instruction which either supplements the experience of the worker or prepares him for an occupation.

The facts set forth in Table V, page 23, will give some notion of the development of evening schools in recent years. Unfortunately the reports from certain of them were incomplete; from others we received no reports whatever. In all probability some of the small evening schools of the state are omitted from this table.

Certain of these schools reported as elementary schools. No doubt some of them maintain elementary courses for the illiterate, but they also maintain courses of advanced character which directly supplement the different occupations of the adults of the various local communities. These are by their very nature secondary and not elementary school courses.

The subjects listed in Table V only partially show the courses of a vocational character or the courses supplementing vocations which are at present maintained.

In the woodshop, apprenticed carpenters, pattern makers, cabinet makers, wheelwrights, and other woodworkers are given training.

In the machine shop courses men are registered who are employed in iron works, in ship building yards, in engine works, in machine works, and in tool, automobile and other factories.

Under the caption ''office work'' a large number of subjects relating to clerical, secretarial or accounting service are maintained for men and women employed in these fields.

Besides training individuals for service as draftsmen, the courses in drawing supplement the practical experiences of men and women in almost all of the common industrial fields where skill is required. In these courses we find carpenters, pattern makers, mill men, plumbers, tinners, plasterers, painters and decorators, ironworkers, dressmakers, milliners and home makers.

The applied science courses relate directly to industrial, agricultural and household occupations. They are attended by electricians, designers, builders, machinists and industrial workers from many fields, gardeners, farmers and housewives.

The large and well organized schools rarely allow a prospective student to leave. The courses are usually administered with the idea that they must meet the needs of students of various occupations and with various interests. The instruction is largely individual and by the project or task method, so that it is usually not difficult to meet the needs and desires of the various applicants.

MANUAL TRAINING, AGRICULTURAL, HOUSEHOLD AND COMMERCIAL SUBJECTS IN THE SEVENTH AND EIGHTH GRADES OF ELEMENTARY SCHOOLS.

City Districts.

Table VI, page 24, contains a statistical report on this subject for cities employing superintendents. Questionnaires were sent out to all schools in these districts maintaining seventh and eighth grades. Reports were received from all but one of the 33 cities. Of the 32 remaining, one only reports no courses. Thirty report manual training, 29 report household art, 28 report household science, 6 report typing and 6 report agriculture.

The manual training and household science and art courses are required of all pupils. The typing is maintained only in certain schools in the district and is elective. The agriculture is required in some of the schools where it is maintained and is elective in others.

The manual training course usually consists solely of bench work in wood, though in a few instances art craft subjects and cement work are given. Most of the courses lead to simple cabinet work; however, in a few instances constructive work in mechanical problems is emphasized. Freehand sketches or mechanical drawings, or both, are required before the pupil is permitted to go to work upon his project.

The household science and art courses are usually confined to cooking and sewing (garment or dressmaking of a simple character), although some of the larger cities provide courses in food service, in the care of the home, in household accounting, in millinery, and, through their drawing departments, in the study of home architecture and home decoration.

The courses in typing are, strictly speaking, not commercial courses, but English composition courses. They serve, however, as prevocational courses for many of the pupils.

The agricultural courses in the city schools are usually practical courses in school gardening. Only six of the city departments reported courses, and while some others maintain the work, a majority of them make no provision for the same.

Rural Districts.

Table VII, page 25, contains a statistical report on this subject from all elementary schools in rural districts, employing six or more teachers. The same kind of questionnaire was sent to these schools as was sent to those in city districts. Reports were received from all but 11 of the 169 schools of this character. Of the 158 remaining, 40 reported no courses. Ninety-nine schools, or 62 per cent of those reporting, maintain courses in manual training; 92, or 58 per cent, maintain courses in domestic science; 23, or 15 per cent, maintain courses in agriculture.

The courses given in this type of rural school are quite like similar courses given in city schools. They are, of course, less comprehensive in scope; and while the laboratories and equipments are as a whole inferior to those of the cities, the opportunities for practical applications are usually better in the country districts. Practically all of the instruction in city schools is given by specialists in the various fields, while many of the courses in the country schools are conducted by the regular teachers.

As pointed out above, but 15 per cent of the rural elementary schools maintaining six or more teachers give instruction in agriculture, and perhaps not more than 25 per cent of the city schools give such work. This is rather surprising when we take into consideration the fact that for nearly ten years the law has required that ''nature study with special reference to agriculture'' shall be taught in each such elementary school in the state. Without doubt the people of the state are favorably inclined toward such instruction or they would have repealed the act long ago. Clearly, the only reason that agriculture is not taught in more schools is that the teachers are not qualified to handle it successfully. This condition your honorable body has already taken steps to remedy by requiring of all who may graduate from normal schools after January, 1919, a practical knowledge of the subject. In this connection, you should be looking forward to taking the steps necessary to insure that all of the teachers in the service shall ultimately qualify in this subject. In the state of Wisconsin all teachers in the service were by law required to qualify in agriculture before a certain specified date, and I understand that the act has been rigidly enforced. The state established a system of vacation schools to provide opportunity for the teachers to qualify.

To sum up, it may be stated that in city schools the manual training and household arts courses are almost as much a part of the curriculum of the elementary school as are any one of the traditional subjects, while a rural elementary school with six or more teachers is not considered up to date unless it maintains both of these subjects.

Very few rural schools with but one or two teachers offer courses in the so-called special subjects, and, perhaps, this is as it should be, since the teachers of the one- and two-room schools could not, as a rule, find time to do justice to both special and regular subjects. Occasionally the pupils of a one-teacher school may be accommodated in two or three grades. The teacher in this case may be able to find time to handle the work, but she is rarely qualified to do so. It would be a rare teacher indeed who could teach satisfactorily music, drawing, manual training, household arts, agriculture and all of the common school branches to the children of the upper grades.

Experience has shown that the best results in the special branches in these grades can be secured only by employing special teachers. This being the case, satisfactory results in certain of these special lines can never be secured in the grammar grades of the rural schools until provision is made for departmental instruction through consolidation. The one- and two-room rural school grew up in response to a need for education in frontier communities. The frontier has in most instances moved on, but this type of school remains as an inheritance to confound those who would as far as possible provide a uniform modern education for all of the children of the commonwealth.

MANUAL AND INDUSTRIAL ARTS.

Descriptive Statement.

The time given to manual training in the elementary schools ranges from one to three hours per week, but in a majority of schools it does not exceed one and one-half hours per week. The woodworking courses in high schools range from one-half unit to four unit courses, a unit course representing about one-fourth of the pupil's time for one year; and the ironworking courses, exclusive of the purely vocational subjects taught in this division, rarely exceed two units in length. As a rule, two successive periods of from forty to fifty minutes each are devoted daily to shop work. In a few schools the work has been arranged so as to provide laboratory periods of from two to three hours each.

As mentioned elsewhere, the manual training courses in the grades are largely confined to bench work in wood directed toward cabinet making. This type of work carried to a more advanced degree prevails also in most of the high schools of the state. However, in these schools the hand work is frequently supplemented by the use of machinery. In the high schools where the courses exceed one unit in length, wood turning is usually included, and in many of the larger city schools pattern making courses are provided. In several of the schools where ironworking courses are maintained, courses in molding are also given.

Metal, leather and clay art craft courses are given in certain of the high schools of the state, but only two or three high schools give all of these courses. The introduction and maintenance of such courses appear to hinge upon the question as to whether any teacher in the department can handle them.

The courses in ironwork, when complete, consist of machine shop practice, including the use of drill press, lathe, shaper, planer, etc., forging and sheet metal work. Only the larger schools in the cities maintain all of these courses. In many places the work still consists merely of a series of exercises planned to give the student experience in the use of tools and the operation of machinery.

The equipment in the different schools varies greatly, ranging from the possession of one or two forges to a shop equipment superior to that of any commercial ironworking shop in the community. A number of the rural high schools that maintain agricultural courses have each added one or two forges and a drill press to the usual woodworking equipment, thus making it possible to provide a complete course in farm mechanics.

While, as pointed out above, many of the high schools of the state still cling closely to cabinet work in their woodworking courses, and exercise work in their ironworking courses, others are breaking away from these traditional forms and are trying to industrialize truly their work in these departments.

In certain high schools in rural districts the manual training courses include building construction of a rough character. Practical work of an elementary character in carpentry, cement, plumbing, painting and tinning is provided. The pupils, under the supervision of the teacher, plan and build laboratories for manual training and household arts, lath houses and hothouses for agricultural purposes, and in some instances dairy barns and other farm buildings for neighboring farmers.

In the city high school the wood working department is beginning to resemble closely the cabinet department of a planing mill. The work is being conducted on a strictly commercial basis, and the product of the shop is being utilized in the buildings of the school department.

In the same manner the molding, forging and machine shop departments are beginning to turn out a product that has commercial value.

Aim of Manual Training.

Clearly, the aim of a manual and industrial course is either prevocational or vocational. If prevocational it should be a general course, touching as many industrial occupations as possible, giving actual experience in as many of the major skilled occupations as conditions will permit, and providing opportunity to study all others indirectly through observation and description provided by visits to industrial plants, by moving pictures and by reliable books—all interpreted through the aid of an intelligent teacher. If vocational it should be a special course, specific rather than general in character, and designed to prepare for a particular occupation open to and attainable by the pupils whom it may attract.

It is quite evident that the same course of instruction can not be both prevocational and vocational. Any attempt to serve these two ends in a single course will invariably defeat both purposes. However, whether the aim of a course be vocational or prevocational, the more practical the work is made, the more it squares up with the customs of the industrial world, the more valuable it will be to the pupil.

While all now agree that the function of this work in the elementary school is prevocational, few, if any, courses have been modeled upon this principle; and while there is also full agreement that most children are not sufficiently developed to acquire much hand skill before the age of fifteen, yet most manual training courses for elementary schools are governed alone by the idea of developing hand skill.

The manual training courses in elementary schools should be converted into industrial study and practice courses, the purpose of which should be to study the various industrial occupations and, as far as possible, to offer opportunities to the pupils to participate in such constructive work as can be readily handled in and about the school. The practical work should be of a real constructive character and should cover as many fields of activity as possible. The building trades offer the best opportunities for suitable practice work.

This plan could be followed to advantage by certain of the high schools, since the work in these is in many cases also intended to be prevocational in character.

HOUSEHOLD ARTS.

As previously stated, the household arts courses in the elementary schools are largely confined to courses in cooking and sewing. In a majority of the schools the sewing is given in the sixth and seventh years or in the seventh year alone, and the cooking is given in the eighth year. The time devoted to the work ranges from sixty to two hundred minutes per week, with ninety minutes the prevailing time. The daily periods for sewing are never less than forty minutes long and for cooking never less than sixty. The favorite laboratory period both for sewing and cooking appears to be ninety minutes.

In the high schools the household arts courses range in length from one to four or five units—each unit representing approximately one-fourth of the pupil's time for one year. Where but one or two units of work are given in the science and art work, the time is usually equally divided between cooking and sewing, though in some instances other subjects are taught. A laboratory period in this subject generally consists of two successive recitation periods, or approximately ninety minutes per day.

A majority of the schools confine the work to courses in sewing and elementary dressmaking and in cooking. Where three or more units of work are provided, the course usually includes a part or all of the following subjects: Home cooking, food service, invalid cooking, home marketing, general sewing and textiles, dressmaking, millinery, dress and millinery designing, house planning, interior design and decoration, house furnishing, shopping, home gardening including floriculture and kitchen gardening, housekeeping, laundering, home nursing, household sanitation, household accounting, dietetics, household chemistry and child study.

It was the intention to report in detail upon the various topics covered under the household arts courses in each of the high schools of the state, but the reports received were not sufficiently detailed for this.

The development in this field of work has been remarkable. Reference to the Summary of Table I, page 15, shows that the first of these courses was introduced during the biennial period ending 1908, and that since that time the increase has been constantly greater each succeeding year. At present 72 per cent of the 267 day high schools of the state have introduced domestic science and 76 per cent domestic art work. The 63 high schools that do not maintain courses in domestic art and the 75 that do not maintain them in domestic science are mostly schools with from two to five teachers only. The summary shows that these courses are considered a necessary part of the high school curriculum in this state and that they would probably be universally adopted if the teacher problem could be solved.

The reports show that the expansion of the content of the courses has also been remarkable, particularly in the last two years. Many of the teachers of this subject are interesting themselves in the community life of their various districts and are adjusting the course to the home needs of their pupils.

COMMERCIAL COURSES.

Descriptive Statement.

Of the 232 high schools maintaining commercial courses, 143 reported the dates upon which the courses were introduced. The earliest date reported was for Fairfield, which introduced the work in 1893. For the first decade the development was relatively slow. The reports submitted show that 21 of the 156 high schools existing at the end of the period had established departments; and while complete figures would show a larger number of courses existing, those submitted show that the great development occurred at a later period. From that time, 1904, until

1912 the development of the subject was very rapid. The report shows that the greatest number of departments was established during the biennial period ending 1912. Since that date the number of new departments established has each year approximately doubled the number of new schools established during the same period. At the present time 87 per cent of the day high schools of the state maintain these courses.

While some difficulty is encountered in handling the teacher problem in the small high schools, it probably gives less trouble in this than in any of the other special fields. The reason is that the regular high school teacher can in a manner equip himself in the technique of this subject in a much shorter period than would be possible in any other special line of work. This is due largely to the fact that the background subjects and the subjects supplementing the technical courses in the commercial fields covered are at least, to some extent, a part of the equipment of almost every high school teacher.

Commercial courses, in so far as they apply to high schools and business colleges, as a rule provide only preparation for clerical office positions. The applied courses include merely the subjects of stenography, typing, bookkeeping and general office work. In the high schools such courses are usually supplemented by courses in commercial law, including legal forms; commercial and industrial history, commercial and industrial geography, commercial arithmetic, commercial English, business correspondence, spelling and writing. In some instances Spanish or German is required. The other subjects selected to complete the course are United States History and English and elective subjects.

The courses range from one to four years in length, those of two years being most common. Where the work is given in one year it usually takes the entire time of the pupil. The most comprehensive courses require about one-half of the pupil's time for four years. While some of the schools will still permit any pupil who has successfully completed the eighth grade work to take the commercial course in one or two years, as the case may be, these individuals rarely succeed in securing and holding positions. *Upon the whole it may be said that the commercial courses in the high schools of this state are four years in length.*

The high schools have been more successful in preparing for office work than for any other occupation. Generally speaking, the courses preparing for such work have been well planned and the instruction has been good.

It is true that business men often find fault with the preparation of those who complete these courses, but the weakness of the product is rarely due to faulty instruction; rather it is due to individual unfitness for the work. Outside of the household arts course this is the only course of a truly vocational character commonly maintained in the high schools of the state. When a student decides that he must prepare in high school for some money-producing occupation he has but this one course open to him. As a result he frequently takes it when he is not fitted for it either by nature or by training. Other students elect the work in order to avoid the foreign languages, mathematics or science required in the university preparatory courses.

The stenographer, typist or secretary must be rapid and accurate, must have an unusual command of the English language and must be generally intelligent. The bookkeeper and accountant must be able to perform the four fundamental operations in arithmetic rapidly and almost as accurately as a machine; he must be systematic and he must be intelligent. In fact, only the best English students should select an occupation such as stenography and typing or secretarial work, and only the most systematic should undertake bookkeeping.

The teacher in the commercial department knows full well that many of his students should have selected some other occupation than the one for which they are preparing, but he hesitates to eliminate them because elimination from the department usually means elimination from school. He recognizes that the high school belongs to the people and that it is for the benefit of all of the children and not for the benefit of the few, and that so long as a pupil does his part the best he can he must be given an opportunity. Thus at the end of the course many are turned out who will never be able to qualify for the particular occupations for which they have prepared; but nevertheless they have secured a high school education which will probably fit their particular situation much better than would a university preparatory course.

The 232 commercial departments of our high schools are turning out each year prospective stenographers and typists and bookkeepers by the thousands. Statistics gathered by a prominent typewriter company two years ago showed that the average wage for beginners in stenography and typing in San Francisco was less than eight dollars per week.

Admitting that the graduates of the commercial department of our high schools are not always competent and admitting that these departments are greatly overstocking the market, the fact remains that they by their more liberal requirements are enabling thousands of young people to secure a secondary education.

Many of the commercial courses maintained by our larger high schools provide, for those who are planning to complete their training in the high school, a much better liberal education than is provided by the usual university preparatory courses. A good commercial course is characterized by the emphasis it places upon English, commercial and economic history and geography, and commercial law, including certain legal procedure and legal forms of a commercial character. Where a modern language is required it is taught from the oral standpoint and, in reading and writing the language, emphasis is placed upon the modern commercial aspect of the subject.

A liberal education is characterized by its breadth of application to the affairs of life. A university preparatory course is, by its very nature, narrow and incomplete; therefore it can not serve the purpose of a liberal training until it is applied in a higher institution. If it is never so applied much of it is waste.

Commercial Courses Need Expansion.

Viewed from a vocational educational standpoint, the commercial courses are entirely too narrow in their scope to meet the needs of the present day. The last census report shows that nearly a third of the working population of this state is engaged in commercial pursuits and clerical work other than that connected with commercial enterprises. Of these the number engaged in actual clerical office work is very small compared to the whole. A large number of those engaged in commercial enterprises are directly engaged in the business of barter or trade, and yet but three high schools in the state maintain courses that prepare for this work.

Most of those who complete the commercial course in a high school, if they find employment in this field, engage in salesmanship. For this occupation they have had no definite preparation and their previous training contributes only indirectly to their efficiency in this line. In addition to these, thousands of other young people are entering this line of work, recruited partially from those who have completed a general high school course, but mostly from those who have had little or no high school training.

So far the courses in salesmanship in this state have mostly dealt with the subject of barter, general service, and the technique of the floor system in mercantile establishments. The study of commodities has received but slight attention and there will perhaps be little development in this subject until this is remedied.

The study of clothing, fabrics, house furnishings, machinery and implements, foodstuffs, the production of the raw materials from which they are developed, their manufacture and distribution, their relative costs and their relative service values, should constitute the foundation work for courses in salesmanship in any one of these lines.

Since so many of the girls of our cities who have to work outside of their homes find their way into establishments that handle clothing and foodstuffs, we should be looking forward to establishing practical courses in salesmanship open to girls over fifteen years of age. These should be largely laboratory courses supplemented by visits to manufacturing and distributing establishments, by observation of agricultural and manufacturing processes through moving pictures and by readings. The theoretical subject of service through salesmanship, the psychology of barter and the technique of store service should be taken up only after the individual has learned something of the commodities she expects to handle.

Such courses would relieve our present commercial departments of caring for many pupils now attempting to prepare themselves for an occupation which they are not fitted by nature and experience to enter, pupils who are taking the work only because the high schools offer them no other courses that prepare for a vocation. They would also open the doors of opportunity to thousands of girls in this state who can not or will not qualify for any of the courses maintained in the high school at the present time. When we have established such courses and through experience have refined them to satisfactory service, then we should expand the work to include preparation for salesmanship in the other lines mentioned above.

AGRICULTURAL COURSES.

Descriptive Statement.

Two years ago sixty high schools reported agricultural courses, but investigation showed that almost half of these consisted of one elementary course in agricultural chemistry or agricultural botany alone. Only thirty-three of these schools gave practical courses in the subject.

A careful survey of the situation made this year shows that 73 high schools are attempting to maintain practical courses in one or more phases of the subject. Table III, pages 20–21, gives a detailed analysis of these courses. It was compiled from the reports received from the various schools, and perhaps some omissions may have occurred. However, the table shows in general the content of the agricultural courses in the high schools of this state.

Of the 73 schools listed 62 reported the dates upon which the courses were introduced. These dates are segregated in the Summary of Table I, page 15. According to the reports received, the first courses were introduced in 1909. During the biennial period ending 1912 fifteen additional schools introduced the work, and during the following biennial period 14 schools were added, while during the last biennial period 31 schools reported the introduction of courses. *In short, the report shows that the first courses were introduced but seven years ago, that there has been a constant increase since that time, and that the number of courses doubled during the last biennial period.*

It is interesting to note that 5 of the 72 schools maintaining courses are located in the Los Angeles City District, mostly in the recently annexed sections of the city.

The agricultural courses in high schools range in length from one-half to four years, and cover from one to six subtopics, such as general farming, animal husbandry, dairying, horticulture, farm management and market gardening.

Four schools admit only pupils who have completed at least one year of the high school course; while the remainder admit pupils from all of the high school grades. Fourteen of the 73 schools also admit pupils to these courses on maturity qualification, such pupils not having satisfactorily completed the eighth grade work.

Of the 73 schools 19 employ teachers who hold special certificates in agriculture, 52 employ teachers with regular certificates, 2 employ teachers with both special and regular certificates, and 2 schools fail to report on this item.

One school employs a teacher who has had experience with the horticultural department of the state, 2 employ teachers who have had experience with the Department of the Interior, 53 employ teachers who have had farm experience, and 9 fail to report.

The farm experience ranges from that gained during vacations while attending high school to several years of farm experience obtained after completing the university course.

Thirty-six schools report that the pupils are required to do practical work both at school and at home, 30 that they are required to do practical work at school only, 3 that they are required to do practical work at home, and 14 do not report.

The amount of practical work required varies greatly in different schools. In some places it is confined to the work attendant upon experimental field courses, in others actual farm work is conducted on the school farm or at home. In some schools the amount of practical work required depends upon the previous experience of the individual pupil. As in most vocational courses, the tendency is to slight the practical aspect in an attempt to cover a wider theoretical field.

Forty-seven schools report general farming courses; 28, animal husbandry courses; 23, courses in dairying; 30, courses in horticulture; 13, courses in market gardening; 15, courses in plant propagation; 15, courses in the study of soils; 13, special science courses (agricultural chemistry and botany) supplementing agricultural work; 9, farm management courses; 16, courses in farm mechanics; and one reports a course in viticulture.

A few of the schools did not submit detailed reports and undoubtedly in some cases courses were not reported because they are given only during alternate years.

The rapid growth of agricultural courses in high schools since their first introduction seven years ago is conclusive evidence that the people of the state desire this type of education. In many instances the work where introduced has not proven entirely satisfactory even to those most interested, and yet, with few exceptions, the people of the various communities have clung to the subject with a determination to solve the problem and thus to place it upon a more satisfactory basis.

Many of the schools that desire to introduce the work have been hindered from doing so because of inability to solve the teacher problem. Very few teachers holding regular certificates have had the necessary special training to handle the work properly, while the teachers holding special certificates may not under the law teach any subjects other than those enumerated in their certificates, nor may special teachers be certificated in subjects other than certain specified special subjects.

Admitting that it is desirable to have the special subjects taught by teachers with special training, it is difficult to see how a high school that employs four, five or six teachers can maintain satisfactory special courses in agriculture, household arts, manual training or farm mechanics, drawing and art, music, and the necessary courses in language, science, mathematics, etc.

There were last year in this state 48 day high schools that employed four or less teachers each, 27 that employed five teachers each, and 34 that employed six teachers each, making a total of 109 schools that employed not to exceed six teachers. These high schools are for the most part located in rural districts where the special courses are most needed.

Very few of the special teachers of agriculture are qualified to teach farm mechanics. This is unfortunate, since it usually necessitates the employment of a special teacher of manual training to carry on this work.

Agricultural Courses Not Entirely Satisfactory.

As suggested above, the agricultural courses have not always proven successful where they have been introduced. In fact, it is doubtful if the school authorities of any school maintaining the work are entirely satisfied with the result they have obtained. This is not, however, surprising since every subject to be found in the curriculum of the school had to pass through a period of experimentation before it could be properly adjusted to the need of the community and the pupil. These considerations lead me to venture certain criticisms and suggestions relative to these courses.

In the first place, we have in the past usually attempted to organize these courses in such a manner as to meet the entrance requirements of the university. This means that we have tried to prepare the boy both for the university and for the vocation of farming, in four years, the minimum time requirement for university preparation alone. This is, of course, an impossibility since the character of the work demanded by the university is entirely different from that necessary in preparing for the vocation.

The university, which is itself a vocational school, demands a theoretical education which is more or less general in character, and reserves for itself the function of utilizing this training as a foundation for the special practical work which it expects to give in preparing the student for any particular occupation. On the other hand, a high school course in agriculture, if it is designed to be a vocational course the function of which is to prepare young men for farming, must be a practical nontechnical special course. Such a course must place most emphasis upon the farm work, and must require a mastery only of such technical subjects as are essential to a reasonable understanding of the same.

The agricultural courses, like most others, were first worked out in the special colleges and in the universities. These courses have therefore been adjusted from the social standpoint to the needs of the professional agriculturists and from the student standpoint to the needs of persons of college age and grade. When the high schools first introduced the subject, there being no other courses worked out, they naturally tried to adapt the college courses in agriculture to high school needs. In this they have failed; first, because these courses include the wrong subjects; and second, because the pupils do not have the necessary maturity and preparation to handle them properly.

The principal function of the agricultural course in the university is so radically different from that of the agricultural course in the high school that both the content of the subjects taught and the method of instruction must also be radically different.

Suggested Changes in Agricultural Courses.

The agricultural courses in our high schools have too largely resolved themselves into courses in science taught agriculturally. What we need in these schools are courses in farming taught scientifically. The product of the high school course in farming should bear the same relation to the technically trained agriculturist as the trained nurse bears to the physician. It is the function of the agriculturist to diagnose and prescribe; it is the business of the farmer to administer his farm and to nurse plant and animal life.

The idea that it is not the business of the school to provide for and require practical farm experience in connection with the agricultural course has almost entirely disappeared. However, the farm experience provided is usually either co-operative work in experimental farming or crop raising on the school farm, or unsupervised work at home, or both. Rarely is the pupil required to conduct such work upon a commercial basis.

It is not a matter of great importance whether the practical experience is secured on the school farm or elsewhere. It is, however, all-important that the work shall be handled by the pupil as a commercial project. A school farm is a very desirable but not a necessary adjunct to an agricultural course in a high school. The main purpose of such a farm should be to provide opportunities for model demonstrations in crop raising and for plant and crop experimentation. Where the school farm is large it can be utilized also for pupils' projects.

In Massachusetts the vocational agricultural schools require each pupil to carry at least one agricultural project through each year course. This may be an undertaking such as the raising of a crop of potatoes or grain; the care of a certain number of fruit trees or vines, a garden plot, a bunch of dairy cows or swine, a dozen or more chickens, turkeys, ducks or geese, or a number of hives of bees. The work is conducted upon a strictly business basis, the pupil charging against the project land or other rental, and the expenditures for fertilizer, feed, or labor, as the case may be. He markets the product and balances the receipts against the expenditures for operation. In most instances the boy rents the land or stock from his parents, though in some cases he rents from the school, in others from strangers. The work is all conducted under the direct supervision and guidance of the teacher of agriculture who spends about one-half of his time going from farm to farm to advise with his pupils and their parents. The pupil spends approximately one-half of his time in practical work.

Agricultural courses established on the project plan should give about one-half of the time to the project work plus farm mechanics, and the other half to theoretical agriculture, including experimental agriculture, science, mathematics, English and citizenship.

As at present maintained, our agricultural courses do not appeal to the boy who will probably become the farmer. The present technical agricultural courses can be handled satisfactorily only by such individuals as are interested in the usual college preparatory work. *We lose from our high schools the boys who are vitally interested in immediate money returns for their work. The main difference between this type of boy and the other is that these individuals develop this trait a little earlier; indeed, it sometimes means that they represent a class of individuals who feel more keenly the responsibilities of life than those who go along thoughtlessly accepting educational opportunities from the state and support from their parents or others as a natural part of their experience.*

Agriculture is perhaps the only large industry that thrives best when administered by individual workers. On the other hand, the corporation has largely supplanted the small independent manufacturer and business man. In these fields the individual has been supplanted largely because the service can probably be better performed by co-operative action. On the contrary, farming on a large scale has almost uniformly proven a failure.

This affects profoundly the vocational situation as it relates to agriculture. A young man completing an industrial course in a secondary school may, in a short time, engage himself as a worker in the industry at a living wage. Not only this, he is usually in line for promotion and he may ultimately arrive in his profession or other occupation without having invested any capital other than brains and muscle. *On the other hand, the young man who completes a high school course in agriculture, if he would make use of his vocational training, must either engage himself as a hired man, a situation which does not pay a living wage and which leads nowhere, or he must establish himself as an independent farmer.* Regardless of the amount of training that he may have had in the subject of agriculture, he can not succeed as an independent farmer unless he knows thoroughly the business of farming. If he knows this, and in addition thereto knows the science of farming, he can command sufficient capital to finance any reasonable undertaking along agricultural lines which he desires to enter. As a matter of fact, opportunities for young men who know the business of farming as well as the science of farming, go begging in every agricultural district in the state of California.

If the above contention is true, then the method which we have pursued in our high schools in training for farming has, as a rule, not been the right one. If the business of farming is absolutely essential to success, then it should be the first consideration in the training of our boys for farm work. There is only one way you can be assured that an individual has been trained in the business of farming and that is to have him, while under instruction in the high school, engage in the business of farming. This experience can be secured only through the project method of instruction. If a strict accounting is made of everything that goes into the project, as well as everything that comes out of the same, and if this accounting is conducted on a common sense, practical basis, then at the end of the school course the youth, his parents, the school authorities and the community will know whether or not he can make a commercial success of farming. If the people of the community, as well as the parents, know that he can make a commercial success, he will have no trouble in securing the necessary financial assistance to establish himself in his occupation.

The conditions in this state are ideal for the development of home project agricultural courses. We have more than two hundred high schools located in agricultural communities; we have good roads; and we have, in these same agricultural communities, thousands of boys out of school who are over fifteen years of age.

VOCATIONAL GUIDANCE.

During recent years much interest has been aroused in this state in vocational guidance. For three years the University of California has maintained courses in this subject in its summer sessions. Meyer Bloomfield, of Boston, lecturer and author in this field, conducted the work for the first two years. Last summer Mr. Jacobs, of San Jose, handled it.

The activities of these and many other interested individuals have aroused teachers and parents alike to a full realization of the importance that should be attached to choosing an occupation. In short, vocational guidance as a propaganda has swept the state. On the other hand, vocational guidance as a practical subject is in its infancy. In a few of the largest high schools guidance experts are employed to counsel with the pupils on future plans. In some of these schools courses are given in life career study and in educational guidance.

Vocational guidance when applied to one attending school always involves educational guidance. Perhaps the person who anticipates securing a thorough school preparation is more in need of guidance than the individual who stops school at fifteen or sixteen to go to work. There is probably more danger of getting lost in the maelstrom of the curriculum of the high school or college than there is of getting lost in the world of occupations. Certainly one lost in the world of occupations would have more chance of finding himself than one lost in a maze of school subjects, few if any of which may be clearly associated with any occupation.

So many of the high schools failed to report on educational and vocational guidance that no statistical statement concerning the same can be made. Certain of the high schools of Los Angeles, Oakland and San Francisco provide educational and vocational guidance. The work is also maintained in many of the high schools in the smaller cities of the state, the courses at San Jose and Pomona standing out most prominently.

The educational guidance courses when given in regular class are as a rule open to first or second year pupils. They deal with the educational equipment required for entrance upon the various occupations; make a critical study of the various branches taught in the high school; and, as far as possible, show their relationship to the various occupations and to the problems of life in general. They also deal with the problem of selecting the courses that adjust themselves most naturally to the various types of mind. Where given in class one recitation period per week for one semester is devoted to the work. Educational guidance is very necessary in most of the high schools of this state since the pupils are generally allowed to elect both courses and subjects. Many of them thus choose an unrelated mass of material which they can neither assimilate nor apply to future needs. They frequently elect courses or subjects because they consider them easy or in order that they may be in the same class with some other pupil. Rarely do they choose them upon consideration of capacity, interest or future utility.

Certain high schools maintain elective courses in life career study. These are usually credit courses utilizing one recitation daily for one semester. They are designed to prepare the student in such a manner as to assist him in making an intelligent choice of a vocation and also in finding suitable avocations; and aim to give him such information as will enable him to judge intelligently—of his own capacity and ability, of the conditions and requirements of each of the common occupations, and of the many elements that contribute to success in life.

Since the requirements of many of the occupations include sometimes a secondary education and sometimes a higher education, it will be seen that educational guidance is frequently a necessary part of vocational guidance.

Class work in educational or vocational guidance can only partially fulfill the requirements of the situation. Since only the most general information relating to occupations, individual capacities and the requirements for success in life may be attained through class instruction, individual study and individual counsel will be necessary to meet the needs of a majority of the pupils.

It will be seen from the above that the term *vocational guidance* does not truly indicate the import of this subject. Knowledge, counsel and individual choice rather than guidance should control the selection of a vocation.

In a democracy the final choice of an occupation must rest with the one who would enter the same, and with no other. It is therefore evident that he who would guide intelligently the youth in the selection of his vocation must be an intelligent counselor. As a corollary to this he who would counsel and he who would be counseled must have the necessary knowledge as a basis for such counsel. Both should know something about the processes involved in each of the common occupations and the conditions surrounding the same. They should also know the type of individual best suited to each occupation. The counselor should know the mental and physical characteristics as well as the training and the economic situation of each youth whom he would guide. The youth should be led to see the lines in which he possesses the most as well as those in which he possesses the least talent. He should understand, among other things, the preparation necessary for entrance upon the vocation, and the recompense to be expected therefrom. *It is therefore evident that vocational guidance in a democracy is largely prevocational education.*

It is highly desirable that each individual should in his own mind select a possible vocation very early in life, that he should constantly have before him a definite goal toward which he is working, because such a selection will help to anchor him and give him a motive for study. He may and probably will change his mind from time to time as he approaches maturity. This may prove an advantage since it will tend to stimulate him to investigate different occupations and thus finally lead to a broadening of his knowledge. Ultimately he should become conscious that the selection of the vocation, being one of the most important steps in his life, should be made only after having given the subject the most careful consideration. This consciousness may be brought about by the study of the lives of men and women who have succeeded in the various walks of life.

Error in the selection of a vocation can be eliminated only by the elimination of ignorance of self and ignorance about the common, present-day occupations and their demands upon the individual. While visits to industrial, commercial and other plants and the viewing of representations of the same through moving pictures may do much to remove our ignorance of these things, these occupations may be adequately interpreted to us only through the agency of the written page or the word of mouth. Reliable information about the modern vocations is difficult to find. Up to a few years ago there was little or no demand for such material and much of that available at the present time is useless because of the change brought about by the modern industrial and commercial revolution.

The establishment of an educational content consisting of accurate information about the principal human occupations will not only make it possible to provide a useful education from the vocational standpoint, but it will also help to provide a liberal education that will be real instead of imaginary.

INDIVIDUAL VERSUS UNIFORM MINIMUM STANDARDS.

In my last report I drew attention to the fact that the uniform minimum standard of promotion maintained throughout the school system was, directly or indirectly, responsible for the elimination of a large proportion of the children of high school age not in attendance upon that institution. This elimination begins in the upper grades of the grammar school and extends through the entire high school period.

In rough numbers, but half the pupils who enter the elementary school complete it. Most of the pupils who finish the eighth grade enter the high school, but statistics of 24 of the principal cities, submitted to you in my previous report, show that for each 100 pupils entering the ninth grade in 1911, 65 reached the tenth grade in 1912, 49 reached the eleventh grade in 1913, 38 reached the twelfth grade in 1914, and approximately 33 graduated from the high school. In consideration of the fact that all of these classes probably gained more than they lost by migration between the states, it would appear that considerably less than one-sixth of our children completed a high school course at that time. Expressing the matter in other terms, for each 100 youths of high school age but 30 are enrolled in the secondary schools.

True, a larger relative proportion of the children probably complete the elementary schools, enter the high schools, remain longer therein and graduate therefrom in the state of California than in any other state of the Union. This is undoubtedly due to the fact that the California schools in general offer a greater diversity of courses and maintain more elastic standards of promotion and graduation than those of any other state. These facts should not, however, cause us to become self-satisfied. It is of little importance that we stand second to none in the degree in which we have democratized education so long as we have not completely adjusted our system to the needs of all of our children. Indeed, recent vocational legislation in several of the states may soon place them in the lead in the matter of enrollment in the public secondary schools.

The uniform minimum standard for promotion and graduation is inherited from the period in American educational development when the secondary school served only as a selective and preparatory institution for the college. At that time it was considered one of the most important, if not the principal, function of the schools to weed out those who were not fitted for college work. Later we standardized the output of the elementary school so that it became also an institution of selection. And though we like to think that we have at present a democratic system of education in this country, the fact remains that the common standards which we maintain for selective purposes are blocking the educational progress of many of our children almost from the day they enter school. Very few elementary schools provide suitable work for the pupils who have failed to make their grades. If they are under fifteen they are required to repeat the work of the previous year, if they are over fifteen they are permitted to leave school, sometimes to work, more often to loaf. At the end of the elementary school course a barrier is placed which only the elect can cross.

Under the present law, and by general custom, the high schools do not admit pupils who have not satisfactorily completed the elementary school course. The elementary school provides but one course and maintains a minimum standard of accomplishment therein that is practically uniform throughout the state. True, a few pupils who have not graduated from the grade schools are allowed by special dispensation to enter certain of the more liberal high schools, but the minimum standard of scholarship maintained in these schools is usually such as to forthwith eliminate this type of pupil.

However, thousands of students are allowed to graduate from the high schools of this state who are not permitted to enter the university upon their record. The presence of these students has not appreciably lowered the educational tone of the California high school. On the other hand, this policy, which is unique and practically if not entirely confined to this state, is mainly responsible for the large number of pupils enrolled in these schools, and for the relatively large number who graduate from them. This policy represents the first step in opening and keeping open the doors of the high schools of the state to all of the children of high school age.

Usually the lowest passing mark in any subject in the high school is 70 per cent. The pupil who passes with a record below 85 or 90 per cent in the fifteen units of work required is not permitted to enter the university. *Why retain the minimum standard at 70 per cent? Why not lower it to 60 per cent or 50 per cent? Why have any uniform standard for those pupils who are not to be permitted to enter the higher institution and for whose scholarship we are not held entirely responsible? Why should we not maintain an individual standard for them, and give them every opportunity to learn all they are capable of learning before turning them away from the school? Why not open the doors of our high schools to all of our children of high school age? Why should we refuse any child an opportunity to get what he can from our schools so long as he does his best? Why? The answer is simple: we still use the public school primarily to select material for higher institutions, and we do not eliminate the uniform standard because we fear that we will destroy the efficiency of the school as an institution of selection.* But even this fear is unfounded. An individual standard of measurement placed upon the effort of each pupil would result in a higher standard of scholarship upon the part of the talented as well as upon the part of the average and the slower pupils. This would be especially true if the actual record in each subject were entered upon the diploma received by the pupil.

Children are born with different potentialities and with different degrees of possibilities within these potentialities. The world demands men and women with different talents and with different degrees of ability in these talents, and yet the school confines itself to developing but a few of these and insists that all reach a certain uniform degree of proficiency therein. *It is, therefore, absurd to attempt to provide equal educational opportunities for all of our children as long as we retain a minimum uniform standard of achievement in the various subjects of the curriculum.*

The only way that we can provide equal educational opportunities is to maintain a curriculum of studies comprehensive enough to permit each child, whatever his special talent may be, to fit himself as well as possible for at least some one of the various occupations that constitute the world of work in a democracy; to allow him free access thereto, and to permit him to advance therein and thus to cover the whole ground, even though lack of native ability may make a high or even a medium standard of scholarship impossible for him.

The school is not answerable for the native ability of the child; no one expects it to transform the child with little capacity into a scholar, but it it charged with the responsibility of giving him an opportunity to develop to the highest degree any talent which he may possess, provided of course that such talent may be desirable and of practical use to society.

VOCATIONAL COURSES AND THE HIGH SCHOOL CURRICULUM.

The titles of the courses and subjects composing the present high school curriculum mean little or nothing to the pupil or patron of the school. The terms classical, scientific, modern language, English, English scientific or technical, as applied to courses in high schools, suggest only in the most general terms their various contents, and give no clue whatever as to their purpose. Likewise the titles of subjects are usually meaningless so far as their application to life is concerned. Hidden away in the subject of physics or chemistry there may be information of a mechanical character which would be very useful to the pupils who will ultimately take up an industrial occupation, but this they can not know before taking the course except as they accidentally discover it through hearsay. Physics II may be a practical course in mechanics and electricity, and Chemistry II may be a course in industrial and agricultural chemistry, but this may be known to the teacher alone and may be discovered only by a personal investigation.

Listed along with such courses as the classical or scientific we usually find the commercial course, the household arts course or the agricultural course; and listed with such subjects as algebra, geometry and physics we find stenography, typing, bookkeeping, cooking, sewing, etc.

A part of the above subjects belong to the academic group. They are distinctly school-made subjects governed by the principle of scientific completeness, and containing in whole or in part complete logical organizations of the fields they represent. The others are vocational subjects that make no claim to logical completeness and that are governed entirely by the idea of immediate utility. The subjects of the first group contain much that may be of practical value to many and much that may be of practical value to few or to none. They are an inheritance from that period of educational development when the dogma of formal discipline rather than the doctrine of direct usefulness governed the selection of the material composing the secondary school curriculum. Clearly the contents of these subjects need modification. Much of the material contained therein which does not have any application to present life demands should be eliminated, and the remainder should be organized to meet more specifically the needs of the various vocational courses maintained in the higher educational institutions.

The academic courses mentioned above are designed to prepare for the various departments or colleges of the university, but it is very difficult, if not impossible, to find out definitely for what departments or colleges they prepare, whether they contain subjects not required by these courses, and whether they contain all of the subjects that would be desirable as a preparation for the future vocational training to be secured in the higher institution of learning.

The function of the high school is to prepare for life and to prepare for higher education. There is disagreement as to which of these functions is more important. Where a choice has to be made between these two purposes the local situation should be the deciding factor. However, the local situation in most communities warrants the establishment of at least one course which will lead to a higher institution and at least two which will prepare for local occupations. One of the two latter should be a complete course in household arts. In rural agricultural districts the other should be a course in one or more phases of practical agriculture.

Suggested Changes in Curriculum.

In order that pupils and parents may clearly understand the purposes of the various courses and the various subjects, and in order that the pupil may make an intelligent choice, high school courses should be organized into two distinct groups.

There should be a vocational group containing courses that lead directly into occupations usually found in the immediate community and these courses should bear the names of the occupations for which they prepare.

There should be preparatory courses leading into occupational courses to be pursued in later years in the high school or in the university, college or normal school; and these courses should bear the names not only of the general occupations for which they are preparing, but also of the departments of the higher institutions which the students are preparing to enter.

The vocational courses should be governed by the needs of the vocations for which they are preparing. They should provide subjects supplementary to such vocations, subjects preparatory to citizenship, and subjects for individual culture.

In the same manner the preparatory courses should be governed by the courses to which they lead. *In short, the dominating purpose in the organization of any course in any public educational institution should be the ultimate life occupation for which it prepares.* These courses should, however, be so modified as to fit the abilities, interests and financial situations of the individual pupils, but in no case should a pupil be allowed to "browse" about selecting the subjects that compose his course without consulting with those who know something of the demands of society.

Each high school should provide as many different vocational and preparatory courses as local conditions warrant and permit. Pupils should be allowed to choose from these courses only after having counseled with parents and teachers. In no case should a pupil be allowed to omit a subject essential to the unity of the course he is pursuing unless it is evident that the interests of the pupil would suffer were he compelled to take the work. However, *a subject should not be considered essential to the unity of a course unless it is clearly an indispensable part of the equipment necessary for entrance upon the occupation for which the course prepares.* If an individual standard of achievement were maintained rather than a minimum uniform standard, but few pupils would insist upon dropping subjects a knowledge of which is necessary to success in the occupations they have chosen. Slight accomplishment with a poor record in a subject that relates closely to the life needs of the pupil will be worth much more to him than marked accomplishment with a high record in a subject that bears no appreciable relation to his future needs.

Many of the small high schools dissipate their energies in trying to maintain university preparatory courses that will fit pupils without condition for each of the colleges of the university. In order to do this numerous classes are maintained which enroll but one, two or three pupils. The funds of the districts are thus needlessly diverted from application to the legitimate purposes for which they have been raised; namely, that of providing secondary educational opportunities suited to the needs of all of the children of these communities who would take advantage of the same. Since the universities provide instruction in these subjects, it is absurd for the high school to maintain them at great expense in order that one or two prospective university students may be placed upon 128-hour instead of 133 or 138-hour courses.

This attempt to imitate the great city high schools has unduly increased the cost of secondary education in many of the small high school districts and has thus hampered the introduction and maintenance of such vocational courses as would tempt thousands of the boys and girls at home to enter the high schools and secure a secondary education.

The small high school should maintain only such preparatory subjects as fit for admission into some one of the colleges of the university, and that college should be selected which requires for entrance those subjects which are generally of most practical value. When this has been done the remainder of the funds should be expended in developing a school which will appeal to and provide a useful education for the children who will never have an opportunity to attend a higher institution of learning. It is unfair and undemocratic to divert all of the resources of a public high school to providing for but one comparatively small group of children; and it is increasingly unfair and undemocratic to maintain courses in a high school that are not *essential* to the welfare of any of the pupils of the community, that are only maintained as conveniences for a few pupils while two-thirds of the children of high school age are not in high school largely because the courses maintained do not appeal to them or fit their needs.

Many persons think that the technical courses maintained in the modern high schools are industrial courses. This is, however, not the case. The technical courses minister but little more to industrial education than do the scientific courses. But they do serve well as preparatory courses to the engineering colleges of the university. In fact they have enabled many young men to reach the university and secure a vocational education who would not have been able to do so through the scientific or the classical courses provided in our high schools. These technical courses were originally intended to be vocational, but that aspect has been lost and only the preparatory function remains.

One of the great problems confronting us in this state is that of having established in the technical and other high schools courses that are really vocational in their nature.

The distinction between a vocational and a technical course is quite clear. *In a vocational course the controlling interest is to be found in shop or in field, and only such science and mathematics are required as are essential to an intelligent interpretation of the practical experience obtained therein. In a technical course the controlling interest is to be found either in science or mathematics, and only such shop or field work is required as is essential to an intelligent interpretation of these.*

It is difficult to establish and maintain courses of a vocational character because there is a powerful tendency to make all courses conform to the scholastic tradition. There is also a tendency to make these courses fit for the university and at the same time fit for life. Where this is attempted the course ultimately becomes purely preparatory and the vocational end is completely lost. No adequate vocational courses can be established in our high schools until we cease trying to make them preparatory to higher educational institutions. The character of the work demanded at the present time for preparation for higher education is so radically different from that required for preparation for an occupation that any attempt to combine the work inevitably defeats the purpose of one or the other. Naturally the vocational end is the one which is lost, the other being thoroughly entrenched in the system.

To sum up, there is great need for a reorganization of the curriculum of the high school to the end that the vocational courses may be segregated from the courses that prepare for higher educational institutions. Further, in order that the parent and the pupil may be able to see clearly where the various courses lead, each course should be indicated by the name of the vocation or group of vocations for which it is intended to prepare. This should apply both to college preparatory and to vocational courses. The college preparatory courses should also be designated by the names of the college courses for which they prepare, and each course, preparatory or vocational, should be governed by the demands of the occupation for which it is planned to prepare even though the actual occupational training is to be secured in a higher institution.

SPECIAL PREVOCATIONAL AND VOCATIONAL SCHOOLS ESTABLISHED.

Prevocational School.

During the last biennial period two schools have been established which are distinctive in their functions.

One year ago the Stockton school department established a prevocational school for over-age boys of the sixth, seventh and eighth grades. Most of the pupils who attended this school had become discouraged with their inability to satisfactorily meet the requirements of the regular grade schools.

It is not the aim of this school to prepare pupils directly for the trades, but rather to provide opportunity for preparation which will better enable them to choose vocations when they leave school. Incidentally, the practical work given serves to stimulate the pupils to greater efforts in their other school work. The academic courses include all of the necessary essentials for entrance into the high school.

The school day extends from nine until four with one hour out for lunch. Three of the six hours are devoted daily to shop work. Courses are provided in carpentry, tinning, sheet metal work, blacksmithing, machine shop, and printing. The academic subjects are closely correlated with the industrial branches, thus providing a new and immediate motive for the work.

The success of the plan is amply proven by the fact that ten children were prepared for high school work by the end of the first year. These pupils had become discouraged with the pursuit of knowledge in the regular school and most, if not all, of them would have failed to complete the elementary course had they remained therein. It is important to note that these children who were not making satisfactory progress in their academic studies while giving their entire time to them in the regular school, satisfactorily completed them while giving half time to them in the prevocational school. The course of study of this school is an index to the type of course that must come in all of our elementary schools before we shall be able to reach the fifty per cent of pupils that under the present organization fail to complete the eighth grade.

Vocational High School.

In January, 1915, the Oakland department of education opened a new vocational high school, the first distinctly vocational school of an industrial character supported by public school funds, in this state. Courses are offered to boys in automobile repairing, cabinet making and carpentry, electrical work, blacksmithing, machine shop work and tool making, printing, and machine and architectural drawing. Girls are given instruction in dressmaking and millinery for the trade, home making and cafeteria management. Other branches taught are music, English, mathematics, science, history, geography, hygiene, economics, and government. In addition to the above, part-time courses are conducted in salesmanship for the benefit of clerks employed in Oakland department stores. Most of the girls take the course in sewing or millinery for the trade in addition to the household arts course. Some of the boys pursue two vocational courses.

Six hours of work daily are required of all pupils, with the privilege of electing another hour. By thus lengthening the school day, the pupil is enabled to carry a regular academic as well as a vocational course. Half of each day is devoted to trade work and the other half to other studies.

The vocational teachers employed in this school have all had practical experience in the occupations which they teach; and the teachers of the academic subjects have been selected partly because of their sympathy with the vocational ideal in education. The academic subjects are all correlated closely with the various vocational courses, so that there is an absolute unity of purpose prevailing among the various teachers of the institution.

The school also maintains a prevocational department open to pupils of the seventh and eighth grades. The academic work for these grades covers about the same subjects as are given in the regular grammar school except that they are taught with constant reference to their relation to industry. Much more time is given to shop work and drawing. The pupils are tried out in wood and metal work, elementary electrical work, and industrial drawing.

The course is planned to enable the pupil to discover his likes and dislikes, his aptitudes and limitations, to consider carefully the advantages and disadvantages of the various trades, and to choose intelligently the kind of work in which he should specialize. Pupils completing the eighth grade receive a diploma of graduation the same as from the other schools of the city.

When a pupil has decided upon the trade he wants to learn, and has attained sufficient physical and mental maturity to be given real trade instruction, he is permitted to take up his chosen work, and given one-half of each day in trade training.

Since the work in a vocational school has to be conducted largely by the individual method, the cost of instruction is greater than in the usual high school. In the Oakland vocational school this is partially offset by the fact that the shops are all turning out a commercial product, some of them largely supporting themselves.

The establishment of this special school is an important event in the development of the California school system. While a number of our great city high schools maintain all of the courses of instruction provided by this institution, it remains to be seen whether real vocational courses can survive in institutions largely given over to the academic ideal. We are fortunate indeed to have one large high school maintained in the state wherein the faculty is as a unit working to solve the problem of building up adequate courses designed to prepare youth directly for active occupational service in the industries.

POSSIBLE FEDERAL AID FOR VOCATIONAL EDUCATION.

At the first session of the 64th Congress the vocational bill, popularly known as the Page Bill, was reintroduced in the upper house by Senator Smith, of Georgia, and in the lower house by Representative Hughes. This measure was originally the outcome of an investigation conducted by a special commission created by Congress. The President, in his last regular message to Congress, recommended its passage, but the heavy drain upon the treasury, due to the preparedness program, may hinder the bill from becoming a law in the near future.

The act as it now stands, if passed, will fit perfectly into the educational program advocated by your honorable body. It is designed to aid the same schools and the same courses throughout the United States that you planned to aid in the state of California, through the vocational education bill which passed both houses without a dissenting vote at the last session of the legislature, but which failed to meet the approval of the Governor because of financial considerations.

The bill, as it now stands, provides for a Federal Board for Vocational Education, to consist of the United States Commissioner of Education, who shall be chairman of said board, and four associate members appointed by the President. The duty of this board is to administer the various funds provided in aid of vocational education, and to make such educational, social, industrial and economic investigations as are necessary for the carrying out of the provisions of the act.

Should the present act become a law, appropriations will be made as follows:

For the support of agricultural education in secondary schools, the first appropriation will be $500,000 annually. This amount will be increased $250,000 annually until it reaches, in ten years, $3,000,000. This fund will be allotted to the states in the proportion which their rural populations bear to the rural population of the United States. It is provided that during the first six years no state shall receive less than $5,000 per annum, and thereafter no less than $10,000 per annum.

The above fund may be applied only to the salaries of teachers, supervisors, or directors of agricultural subjects, and then only as provided through general regulations established by the various state boards of education with the approval of the federal board.

For the support of trade, industrial, and home economics subjects the same provision will be made. In this case, however, the national fund will be available only for salaries of teachers, and will be allotted to the states in the proportion which their urban populations bear to the total urban population of the United States.

For the preparation of teachers, supervisors and directors of agricultural, trade, industrial and home economics subjects $500,000 will be appropriated for the first year. This amount will be increased at the rate of $200,000 annually until it reaches $900,000 and thereafter the annual appropriation will be $1,000,000. It is provided that this fund shall be apportioned upon the basis of population, and also that for the first three years no state shall receive, upon this account, less than $5,000 per annum, and thereafter no less than $10,000.

The act provides for extra appropriations to cover the sureties provided for in each case.

Before a state will be entitled to receive national aid, its state board of education must submit plans of the work to the federal board. Either the state or the local community will be required to provide as a minimum amount one dollar for each dollar contributed by the national government.

The education provided for under this act will have to be of less than college grade and maintained for the purpose of fitting pupils fourteen years of age or older for specific vocations. One-third of the entire amount received from the national government will have to be used for part-time instruction in day schools for pupils over fourteen and under eighteen years of age. The instruction in night schools receiving such aid will have to supplement the daily employment of the students.

A DISCUSSION OF THE PRESENT LAW AS IT RELATES TO PART-TIME CLASSES, EVENING SCHOOLS AND STATE AID, WITH CERTAIN RECOMMENDATIONS.

The Evening School.

The present law provides that an evening high school, in order to qualify as such, must be maintained the same length of time during the year as the other schools of the district, it must be maintained five nights per week, and after the first year it must have an average daily attendance of ten pupils. This means that it must meet all of these conditions and have an average half-day or full evening attendance of twenty pupils before it can qualify to receive state and county aid. However, just as soon as it does qualify as a high school with an average daily attendance of ten, it is entitled to receive from the state fund approximately $1,000 on the school basis and from the county fund $125 for each of the first four teachers employed for the full evening session. In addition to this it is entitled to receive its apportionment on average daily attendance, which approximates $100 from the state fund and $533 from the county fund. Thus if it employs but one teacher it is entitled to receive in the neighborhood of $1,758 from state and county, and if it employs two teachers it may receive approximately $1,883 from these sources.

Since the usual annual salary of the evening high school teacher ranges from $400 to $700 per year, it would be good business for a high school board to maintain an evening high school if it could be sure of securing the minimum average daily attendance required. A district maintaining such as school might clear without any effort on its own part $1,000 or $1,200 annually.

On the other hand, if the evening high school, on account of lack of attendance or other cause, can not be maintained the full length of time that the day high school is maintained, if it can not be maintained five nights in the week, or if it can not secure a minimum average daily attendance of at least ten pupils, it is certainly a bad investment from the financial standpoint since no aid whatever can be obtained from state or county.

At the same time, if the authorities of a day high school desire to maintain a special course for part-time pupils after school hours, on Saturdays or in the evening, the attendance can not be returned and no aid can be received either from state or county. Further, the small high school is discriminated against because it can not maintain evening classes for one, two, three or four evenings a week only and count the attendance. Nor can it maintain a class for three or four months, as the case may be, and return the attendance.

The evening school is largely intended to provide educational opportunities for adults who are under employment. Attendance is voluntary so, if these schools are to serve the state by reaching all of those who are in need of further school training, they must not only provide state-wide opportunity for the various individuals to secure the training that is best fitted to their personal needs, but they must provide this opportunity at such time as may fit the convenience of these people. Thirty-eight or forty-two weeks per year is more than many of them can or will attend, and five evenings per week, week in and week out, are considered impossible by most of them. They have home, business or social duties which they consider of equal or greater importance. These require at least a part of their evenings.

Upon the whole, evening schools can maintain successfully only such courses as require attendance but one, two, three, or at most four evenings per week, depending upon the time that the individuals of various classes can spare from their other duties. Hence it is only in the cities where the attendance is large that the courses can be so arranged as to maintain successfully a school five evenings per week for the full academic year. Though fifty persons in a high school district might desire school opportunities for two or three evenings each week, it would be impossible to provide the same for them alone and return the attendance and thus secure state and county aid for maintaining the work.

Part-time Classes.

During the last two years a number of rural high school districts desired to maintain after-school or Saturday classes in agriculture for the benefit of enterprising young farmers in their communities. This office was consulted as to whether such classes could be maintained and as to whether the attendance could be returned as high school attendance. Unfortunately it was necessary to inform these districts that they could not count attendance in these classes, neither could they maintain them as high school classes nor use high school funds to pay the teachers of agriculture for such work.

Under the operation of our present law an elementary school district can not maintain continuation or part-time courses after regular school hours, or on Saturdays, for persons over fifteen years of age who are under employment, though fully fifty per cent of our children leave the elementary school without completing the course, and only about half of those complete the sixth grade. As a rule the evening school does not appeal to an individual until he is older, until he has entered or is about to enter upon an apprenticeship. The evening school attendance—and properly so—is largely confined to individuals over eighteen years of age.

The elementary evening classes where they exist are also providing the only educational opportunities for adult foreigners who do not know the English language or who are illiterate. The education of these persons who, when they first arrive, constitute a more or less floating population and who are therefore peculiarly charges of the nation and state rather than of the local communities, is of great importance and nation and state should provide aid to such school districts as take upon themselves the responsibility and the burden of providing this education. In some instances these persons are to be found in considerable number in rural communities. The elementary school districts wherein they reside can not, as a rule, afford to maintain evening courses for their benefit, and the law governing evening high schools and attendance upon the same is such as to eliminate the possibility of the high school districts taking care of this problem. If provision can be made for caring for this class of persons through evening high school classes, the state aid and the county aid will be sufficient for the work until the national government moves in the matter.

Function of the Evening High School.

The evening high school does not duplicate the work of the day high school nor does it minister to the same class of students. The persons who are served by this school would as a rule find it impossible to attend the day high school even if it provided suitable courses. The work of the evening school is mostly designed either to prepare directly for a vocation or to supplement the training and experience of individuals already engaged in occupations. The instruction to be satisfactory must be largely individual and by the project or task method; consequently the number of students that can be handled successfully in one class is much smaller than can be handled in a regular high school class. True, these schools usually occupy the regular high school building, but this does not alter the situation as it relates to instruction, and as it relates to the need for state and county aid to stimulate the introduction of evening school courses in the many small high school districts throughout the state.

The present law which provides state and county aid on the school and teacher as well as on the attendance basis, and which is therefore intended to stimulate the creation of new evening high schools in order that educational opportunities may be extended to those who have not been fortunate enough to complete their education in the regular day schools, or who need vocational training or training supplementary to a vocation, actually stimulates and aids the establishment of such schools and the provision of such opportunities only in the larger centers of population.

In view of these considerations your Commissioner of Vocational Education recommends that steps be taken to have the various sections of the existing law amended to provide as follows:

Amendments to Law Recommended.

That local school authorities shall be authorized to maintain in connection with the day elementary and day high schools under their charge part-time elementary and secondary classes outside of regular school hours, either during the day or the evening, said classes to be held at such hours, on such days or evenings and for such length of time as may be determined by the local school authorities; and that the enrollment of and attendance upon such classes shall be kept separately and the units of average daily attendance added to the attendance of the respective day schools.

That where local authorities maintain evening schools of the elementary or secondary grade they shall be authorized to hold sessions on such evenings and for such periods and lengths of time during each year as may be deemed advisable; and that the enrollment of and attendance upon such schools shall be kept separately and the units of average daily attendance added to the attendance of the elementary or secondary schools of the district, as the case may be.

That any person under 16 years of age, employed during the daytime and not in full attendance upon an elementary school, may attend an evening high school class; that any person over 16 years of age may attend an evening high school class and that the attendance of such person may be returned as high school attendance.

That high school boards may maintain in their local day high schools special part-time courses for persons engaged in agricultural, commercial, industrial, trade, or other vocational pursuits, and that the enrollment of and attendance upon such courses shall be kept separately and the units of average daily attendance added to the attendance of the various high schools; provided, that where each pupil of a class pursuing such a part-time course in agriculture devotes at least three hours daily or an equivalent amount of time to farm mechanics and to farm project work conducted by him on a commercial basis, and at least three hours daily or an equivalent amount of time to academic work in school or in class—a part of which supplements the practical work—all under the direct supervision of a teacher holding a secondary special certificate in agriculture, the project work and farm mechanics and the academic work or school attendance shall each count equally in making up each minimum six-hour unit of average daily attendance; and provided further, that where each pupil of a class pursuing a part-time course in any other vocational subject devotes at least three hours daily or an equivalent amount of time to practical educative work under employment in that vocation, and at least three hours daily or an equivalent amount of time to academic work in school or class, a part of which supplements the practical experience—all under the direct supervision of a competent and properly certificated vocational teacher—the practical work and the academic work or school or class attendance shall count equally in making up each six-hour unit of average daily attendance.

That the laws relating to the apportionment of state and county high school funds upon the school unit and teacher unit bases be so changed as to apply only to day high schools rather than to day and evening high schools.

That *additional* state aid be provided to high school districts as follows: For each of the first ten units of average daily attendance in the district upon part-time courses provided during the regular day school hours for persons engaged three or more hours each in academic and three or more hours in occupational work as described above, $25, and for each additional unit of average daily attendance $10; these amounts to be apportioned to the various elementary and high school districts through the usual channels in accordance with the attendance reported and used as a basis for the appropriation.

PROVISION NEEDED FOR THE PROFESSIONAL TRAINING OF TEACHERS OF VOCATIONAL SUBJECTS.

All agree that the teacher of a vocational subject must be a master of the occupation which he would teach. That this view is accepted is evidenced by the fact that while the legislature at its last session authorized the State Board of Education to establish and maintain such standards as it may see fit for certification in other special subjects, it provided that a credential may not be granted in a vocational subject unless the candidate shall have had at least three years of experience as a journeyman worker, or its equivalent, in the occupation in which he desires certification.

During the last year your honorable body granted 63 credentials of the purely vocational type. A few of these were granted to persons who had previous teaching experience; of the remainder none had special training for teaching and they were given temporary credentials only.

The problem of working out satisfactory vocational courses is a sufficiently difficult one even for the professionally trained, experienced teacher. Unlike the teacher of the regular school branches the untrained teacher in this field has no pupil experience in the subject to guide him and if he depends upon his experience as a pupil and tries to apply the method of the common school branches to the new field he will most certainly prove a failure. Another factor which tends to make the situation still more difficult is the lack of academic training upon the part of the most competent workers in the skilled occupations.

The temporary credential which serves to eliminate automatically those who have no talent for teaching would probably meet the situation if we were confronted only with the problem of selecting teachers, but we are also confronted with the problem of building from the foundation the content of each of the vocational courses and a satisfactory method of instruction therein. Vocational education is in its infancy; it is for us a new departure; its problems are many and difficult of solution; it is competing with scholastic tradition which condemned it before birth and which is combating it at every turn. The failure of a teacher means the failure of a class, and but few of the vocational subjects are in a position to withstand many if any such failures.

The people of California are convinced that vocational training should be made an essential part of the educational scheme of this state and are ready to give it a trial; the school authorities are beginning to introduce the work, but realizing the danger of failure they hesitate to experiment with a teacher who may neither know what to teach nor how to teach. If we would guard against failure in these subjects we must have a body of teachers who are not only masters of their subjects but teachers who are competent to assist in building up a content of teachable knowledge in their own special fields and who are trained to impart to others what they know.

Men and women of experience engaged in skilled occupations are not likely to give up their work and attend a day normal school or technical school in order to get the necessary professional training. They are usually thirty or more years of age and the sole support of a family. Since the field is new and the introduction of courses problematical, even if they do obtain the necessary training and qualify they may not be able to secure a position for some time, perhaps never. Even if they were willing to attend a day normal school none of these schools could provide opportunity for practice teaching in vocational subjects, since most of these courses are at present maintained only in the public evening schools of the state.

There can be little doubt that many men and women skilled in industrial and commercial occupations would be willing to attend evening classes for the training of vocational and manual arts teachers. It would therefore seem that since the prospective students can not afford to give up their daily work or will not give it up in order to attend teachers' training classes, and since the only adequate facilities for practice teaching exist in the public evening schools, it will be necessary to make provision for these classes in connection with such city school systems as maintain the necessary evening vocational courses.

Legislation Recommended.

Two years ago I recommended to your honorable body legislation covering this matter, and you, in turn, recommended the same to the legislature. You provided for the introduction of a measure, Senate Bill 237, which I feel certain would have passed had not the financial situation made it impossible at that time. The two years of experience have developed nothing that leads me to change my mind in regard to the need for such legislation, nor has anything so far developed which would lead me to recommend any vital changes in the bill as originally introduced. I therefore recommend that you urge the passage of the measure at the coming session of the legislature.

PART II.

CERTIFICATION OF TEACHERS OF SPECIAL SUBJECTS.

GENERAL STATEMENT.

After years of experience upon the part of county boards of education in handling independently of each other the matter of certifying teachers of special subjects, and upon the request of the members of such boards, the superintendents of schools and the teachers of the state, acting through the Council of Education, the legislature of 1915 made it a duty of the State Board of Education to prescribe uniform regulations and qualifications upon which county boards of education could grant such certificates.

Your Commissioner immediately started an investigation of the status of certification in special subjects as maintained by the various county boards of education of the state. This investigation revealed the fact that there was practically no uniformity in the standards maintained by the various county boards.

In some instances, persons had been authorized to teach certain special subjects in high schools who possessed no school training beyond a secondary school course and who had little or no experience in the special subjects to make up for this lack of academic education. Some counties granted the certificate upon credentials alone, others maintained examinations in the various special subjects. In most of the counties no distinction in qualifications was made for the elementary or the secondary special certificate. In fact, in many of the counties no general standard was maintained, each case being handled without regard to any general standard of proficiency. The few counties that did maintain a general standard usually required for the certificate but two years of training beyond a high school course. A part of these maintained the above standard for the elementary certificate and required three years of training beyond a high school course for the secondary certificate. Only one county in the state required four years of training beyond a high school course for the special certificate of secondary grade. The investigation showed that special certificates had been granted in 143 different subjects.

With this information at hand your honorable body provided that county boards of education may grant certificates in special subjects only upon credentials issued by certain accredited educational institutions and upon special credentials issued by the State Board of Education.

By general regulation you fixed the minimum requirements for the credentials as follows:

For the elementary credential you provided, (*a*) that the candidate shall have at least three years of instruction beyond that required for graduation from a high school maintaining a four-year course in advance of the eighth grade, or that he shall possess an equivalent amount of training; (*b*) that at least one-half of the said three years' instruction shall have been devoted to study or work in the special subject or subjects in which the individual is applying for certification and in such subjects as are strictly supplementary thereto, as arranged and approved by the recommending authorities of the institution in which the work was taken, or that he shall possess an equivalent amount of special training; (*c*) that two-fifths of a year of the time required to be given to the special subject or subjects shall have been devoted to a study of the pedagogical subjects suited to the training of an elementary school teacher; at least one-half of which time shall have been devoted to practice-teaching, including methods of instruction in the special subject or subjects, under competent supervision.

For the secondary credential you provided, (*a*) that the candidate shall have at least four years of instruction beyond that required for graduation from a high school maintaining a four-year course in advance of the eighth grade, or that he shall possess an equivalent amount of training; (*b*) that at least one-half of said four years' instruction shall have been devoted to study or work in the special subject or subjects in which the individual is applying for certification and in such subjects as are strictly supplementary thereto, as arranged and approved by the recommending authorities of the institution in which the work was taken, or that he shall possess an equivalent amount of special training; (*c*) that at least two-fifths of a year of the time required to be given to the special subject or subjects shall have been devoted to a study of the pedagogical subjects suited to the training of a secondary school teacher; at least one-half of which time shall have been devoted to practice-teaching, including methods of instruction in the special subject or subjects, under competent supervision.

At your request this office had blanks printed and sent to the various institutions in the United States which prepare persons for teaching special subjects. A number of these responded with the request that they be accredited in certain special lines. After a careful investigation of the opportunity for training offered by each of these institutions, you authorized 14 located in this state and 13 located in other states to issue credentials in certain specified special subjects.

The detail of handling the cases of applicants for the state board credential in special subjects was turned over to this office. During the year in the neighborhood of 2,000 persons made inquiry concerning the procedure for securing this credential. After being informed of the standards maintained by the State Board of Education many of these persons made no further application. Of those who did formally apply many were unable to qualify.

In handling the various applications the state board has, except in the case of successful teachers already in the service, rigidly adhered to the standard for certification set forth above. In substituting equivalents for academic training, the board has in no case allowed more than one year of credit for each two years of practical or teaching experience in the special field. The statistics printed herewith will give some notion of the scholastic training and experience of the various individuals granted credentials by the State Board of Education.

TABLE I.

Manual and Fine Arts Type.

	Men	Women	Total	Years of academic training beyond high school course*				Years of practical experience in vocation				Years of teaching experience				
				1 or more	2 or more	3 or more	4 or more	2 or more	3 or more	6 or more	10 or more	1 or more	2 or more	3 or more	5 or more	8 or more
Elementary Grade.																
Manual Training	3	1	4	-----	1	-----	-----	-----	-----	1	1	-----	-----	1	1	1
Manual Training, Instrumental Drawing	1	-----	1	-----	1	-----	-----	1	-----	-----	-----	-----	-----	-----	1	-----
Manual Training, Arts and Crafts	1	-----	1	-----	-----	-----	1	-----	-----	-----	-----	-----	-----	-----	1	-----
Free-hand Drawing, Painting	-----	4	4	-----	-----	2	2	-----	-----	-----	-----	-----	-----	-----	-----	3
Free-hand Drawing, Painting, Instrumental Drawing	-----	1	1	-----	-----	-----	1	-----	-----	-----	-----	-----	-----	-----	-----	1
Free-hand Drawing, Painting, Arts and Crafts	-----	2	2	-----	-----	1	1	-----	-----	-----	-----	1	-----	-----	-----	-----
Free-hand Drawing, Painting, Instrumental Drawing, Arts and Crafts	1	2	3	1	-----	1	1	-----	1	-----	-----	-----	-----	-----	1	-----
Arts and Crafts	-----	1	1	-----	-----	-----	1	-----	-----	-----	-----	-----	-----	-----	1	-----
Totals, Elementary Grade	6	11	17	1	2	4	7	1	1	1	1	1	-----	1	5	5
Secondary Grade.																
Woodwork	12	-----	12	3	3	3	-----	-----	2	-----	5	3	-----	3	-----	5
Woodwork, Instrumental Drawing	17	-----	17	3	6	1	4	4	3	4	3	1	6	2	3	2
Woodwork, Instrumental Drawing, Arts and Crafts	7	2	9	-----	2	5	2	-----	1	1	1	-----	-----	2	5	2
Woodwork, Arts and Crafts	4	-----	4	-----	-----	2	1	-----	3	-----	-----	-----	1	1	-----	-----
Woodwork, Free-hand Drawing, Instrumental Drawing, Arts and Crafts	2	1	3	-----	2	-----	1	1	-----	-----	-----	-----	-----	2	-----	1
Woodwork, Free-hand Drawing, Painting, Instrumental Drawing, Arts and Crafts	1	1	2	-----	-----	1	1	-----	-----	-----	-----	-----	1	-----	1	-----
Woodwork, Free-hand Drawing, Painting, Instrumental Drawing	2	-----	2	1	-----	-----	1	-----	1	1	-----	-----	-----	1	-----	-----
Woodwork, Free-hand Drawing, Arts and Crafts	-----	1	1	-----	-----	-----	1	-----	-----	-----	-----	-----	-----	-----	1	-----
Woodwork, Ironwork, Free-hand Drawing, Instrumental Drawing, Arts and Crafts	1	-----	1	-----	-----	-----	1	-----	-----	-----	-----	-----	-----	-----	-----	1
Woodwork, Ironwork, Free-hand Drawing, Painting, Instrumental Drawing, Arts and Crafts	1	-----	1	-----	-----	-----	1	-----	1	-----	-----	-----	-----	-----	1	-----
Woodwork, Ironwork, Instrumental Drawing, Arts and Crafts	8	-----	8	-----	6	1	1	1	2	2	-----	-----	1	2	4	1
Woodwork, Ironwork, Instrumental Drawing	8	-----	8	2	1	-----	5	2	1	1	1	2	1	1	-----	4

Woodwork, Ironwork, Free-hand Drawing	1	-----	1	-----	-----	-----	1	1	-----	-----	-----	-----	-----	-----	-----	-----
Woodwork, Ironwork, Free-hand Drawing, Instrumental Drawing	1	-----	1	-----	-----	-----	1	1	-----	-----	-----	-----	-----	-----	-----	-----
Woodwork, Ironwork	1	-----	1	-----	-----	1	-----	-----	1	-----	-----	-----	-----	1	-----	-----
Ironwork	2	-----	2	-----	-----	1	-----	-----	1	-----	1	-----	-----	-----	1	1
Ironwork, Free-hand Drawing, Instrumental Drawing, Arts and Crafts	1	-----	1	-----	-----	-----	1	-----	-----	1	-----	1	-----	-----	-----	-----
Free-hand Drawing, Painting	3	10	13	-----	1	5	7	5	-----	-----	2	1	1	1	2	2
Free-hand Drawing, Painting, Instrumental Drawing	2	1	3	-----	-----	-----	3	-----	1	-----	1	-----	-----	-----	1	1
Free-hand Drawing, Painting, Instrumental Drawing, Arts and Crafts	2	17	19	-----	3	4	12	-----	2	-----	1	2	1	4	7	3
Free-hand Drawing, Painting, Arts and Crafts	-----	14	14	-----	2	2	10	-----	1	-----	1	2	1	4	1	3
Free-hand Drawing, Instrumental Drawing, Arts and Crafts	-----	1	1	-----	1	-----	-----	-----	-----	-----	-----	-----	-----	-----	1	-----
Free-hand Drawing, Arts and Crafts	-----	2	2	-----	-----	1	1	-----	-----	-----	-----	-----	1	-----	-----	-----
Free-hand Drawing	-----	1	1	-----	1	-----	-----	-----	-----	-----	-----	-----	-----	1	-----	-----
Instrumental Drawing	2	-----	2	-----	1	-----	-----	-----	-----	1	1	1	-----	-----	-----	-----
Arts and Crafts	-----	2	2	-----	2	-----	-----	-----	-----	1	1	-----	-----	1	-----	-----
Totals, Secondary Grade	78	53	131	9	31	27	55	15	20	12	18	13	14	26	28	26

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*Two persons had less than a full high school course or an equivalent amount of schooling. Ten other persons had less than five full years of schooling beyond an elementary school course.

TABLE II.

Technical Arts Type.

	Men	Women	Total	Years of academic training beyond high school course				Years of practical experience in vocation				Years of teaching experience				
				1 or more	2 or more	3 or more	4 or more	2 or more	3 or more	6 or more	10 or more	1 or more	2 or more	3 or more	5 or more	8 or more
Elementary Grade.																
Instruction of Deaf Children	-----	3	3	1	2	-----	-----	-----	1	-----	-----	1	-----	-----	1	1
Oral and Dramatic Expression	-----	3	3	-----	-----	1	2	1	-----	-----	-----	-----	-----	-----	-----	-----
Agriculture	-----	1	1	-----	-----	-----	1	-----	-----	-----	-----	-----	-----	-----	-----	-----
Totals, Elementary Grade	-----	7	7	1	2	1	3	1	1	-----	-----	1	-----	-----	1	1
Secondary Grade.																
Engineering	3	-----	3	-----	-----	-----	3	2	-----	-----	-----	-----	-----	-----	-----	1
Engineering, Instrumental Drawing	3	-----	3	-----	-----	1	2	-----	1	1	1	-----	-----	-----	-----	-----
Engineering, Instrumental Drawing, Applied Electricity	1	-----	1	-----	-----	-----	1	-----	-----	-----	-----	1	-----	-----	-----	-----
Engineering, Instrumental Drawing, Machine Design	1	-----	1	-----	-----	-----	1	-----	-----	1	-----	-----	-----	-----	-----	-----
Agriculture	11	-----	11	-----	-----	2	9	1	3	2	-----	1	1	2	-----	-----
Agriculture, Farm Mechanics	1	-----	1	-----	-----	-----	1	-----	-----	-----	-----	-----	-----	-----	-----	-----
Agriculture, Landscape Architecture, Landscape Design	1	-----	1	-----	-----	-----	1	1	-----	-----	-----	-----	-----	-----	-----	-----
Architecture, Instrumental Drawing	2	-----	2	-----	-----	-----	2	-----	1	-----	-----	-----	-----	-----	-----	-----
Oral and Dramatic Expression	2	6	8	1	1	1	5	-----	-----	1	2	-----	-----	1	1	2
Oral and Dramatic Expression, Library Craft, Technique and Use	-----	1	1	-----	-----	-----	1	-----	-----	-----	1	-----	-----	-----	1	-----
Library Craft, Technique and Use	-----	20	20	7	-----	3	10	3	3	5	6	3	-----	-----	6	1
Journalism, Advertising	1	-----	1	-----	-----	-----	1	-----	-----	-----	1	-----	-----	-----	-----	-----
Totals, Secondary Grade	26	27	53	8	1	7	37	7	8	10	11	5	1	3	8	4

TABLE III.

Household Arts Type.

	Men	Women	Total	Years of academic training beyond high school course				Years of practical experience in vocation				Years of teaching experience				
				1 or more	2 or more	3 or more	4 or more	2 or more	3 or more	6 or more	10 or more	1 or more	2 or more	3 or more	5 or more	8 or more
Elementary Grade.																
Household Science, Household Art, Household Economy		11	11	2	7	1	1		1	1	1	1	4	2	1	1
Totals, Elementary Grade		11	11	2	7	1	1		1	1	1	1	4	2	1	1
Secondary Grade.																
Household Science, Household Art, Household Economy		58	58	1	7	13	37	10	5	3	1	10	4	10	10	9
Household Science, Household Economy		2	2			1	1						1		1	
Household Science, Household Economy, First Year Sewing		1	1			1						1				
Household Art, Household Economy		1	1				1									1
Household Art		1	1		1					1						1
Sewing, Art Needlework		1	1				1				1					1
Sewing, Millinery		1	1				1									1
Totals, Secondary Grade		65	65	1	8	15	41	10	5	4	2	11	5	10	11	13

TABLE IV.

Commercial Type.

	Men	Women	Total	Years of academic training beyond high school course*				Years of practical experience in vocation					Years of teaching experience				
				1 or more	2 or more	3 or more	4 or more	1 or more	2 or more	3 or more	6 or more	10 or more	1 or more	2 or more	3 or more	5 or more	8 or more
Elementary Grade.																	
Stenography and Typing, Bookkeeping		2	2		1		1	1									1
Stenography and Typing, Bookkeeping, Penmanship		1	1		1			1					1				
Penmanship		1	1	1											1		
Totals, Elementary Grade		4	4	1	2		1	2					1		1		1
Secondary Grade.																	
Salesmanship, Stenography and Typing, Bookkeeping	1		1				1					1					1
Salesmanship, Stenography and Typing, Bookkeeping, Banking and Finance	2		2			1	1			1					1		
Salesmanship, Bookkeeping	2		2	1		1					1	1		1	1		
Stenography and Typing, Bookkeeping	26	39	65	10	14	10	25	11	7	9	13	4	6	7	10	13	17
Stenography and Typing, Bookkeeping, Penmanship	7	11	18	1	5	5	6	3	3	3	2	2	2	1	3	3	8
Stenography and Typing, Bookkeeping, Banking and Finance	6		6	1	1	1	3	1	1	1		1		1			3
Stenography and Typing, Bookkeeping, Penmanship, Salesmanship	1		1				1	1								1	
Stenography and Typing, Penmanship		2	2		1	1		1		1							2
Stenography and Typing		22	22	4	5	4	9	3	3	5	4	2	3	2	2	5	4
Bookkeeping	1		1				1										1
Bookkeeping, Penmanship	2		2		1	1		1	1							1	1
Commercial Law	2		2				2				1						
Penmanship		3	3	1	1	1										1	2
Penmanship, Commercial Spelling		1	1			1			1							1	
Typing		1	1				1										
Totals, Secondary Grade	50	79	129	18	28	26	50	21	16	20	21	11	11	12	17	25	38

*Seven persons had less than five full years of schooling beyond an elementary school course.

TABLE V.

Physical Culture Type.

	Men	Women	Total	Years of academic training beyond high school course*				Years of practical experience in vocation				Years of teaching experience				
				1 or more	2 or more	3 or more	4 or more	2 or more	3 or more	6 or more	10 or more	1 or more	2 or more	3 or more	5 or more	8 or more
Elementary Grade.																
Play and Playground Management	1		1			1										
Physical Education and Training	1	1	2			2						1				
Play and Playground, Athletics, Gymnasium	1		1		1			1								
Physical Education and Training, Play and Playground		1	1		1							1				
Totals, Elementary Grade	3	2	5		2	3		1				2				
Secondary Grade.																
Physical Education and Training		5	5			1	4	1							1	1
Physical Education and Training, Play and Playground		4	4			2	2	1					4			
Physical Education and Training, Play and Playground, Athletics	4	11	15		1	2	12	2		1		1		4	4	1
Physical Education and Training, Play and Playground, Athletics, Gymnasium	3	2	5			3	2		1	1		1	1	1		1
Physical Education and Training, Athletics	2	3	5			1	4					1	1	1		1
Physical Education and Training, Athletics, Gymnasium		1	1				1								1	
Athletics, Gymnasium	3		3			1	2					1	1			
Athletics, Cadet Drill	1		1				1									
Athletics	5		5			1	4	1	1	1					1	
Cadet Drill	8		8	2	2	1	2		3	2	1			1		2
Totals, Secondary Grade	26	26	52	2	3	12	34	5	5	5	1	4	7	7	7	6

*One person had less than five full years of schooling beyond an elementary school course.

TABLE VI.

Music Type.

	Men	Women	Total	Years of academic training beyond high school course*				Private training in solid year units			Years of practical experience in vocation			Years of teaching experience					Years of private teaching			
				1 or more	2 or more	3 or more	4 or more	1 or more	2 or more	4 or more	2 or more	3 or more	6 or more	1 or more	2 or more	3 or more	5 or more	8 or more	2 or more	4 or more	6 or more	8 or more
Elementary Grade.																						
Vocal	----	3	3	----	2	----	1	----	1	----	----	----	----	----	----	1	1	1	1	----	----	----
Vocal, Instrumental	----	7	7	3	2	2	----	2	5	----	3	2	----	----	2	3	----	----	1	----	----	1
Vocal, Instrumental, Orchestral	----	4	4	1	----	1	1	2	1	1	1	----	1	----	----	----	1	----	----	----	----	1
Instrumental	----	1	1	----	1	----	----	1	----	----	----	----	----	----	----	1	----	----	----	----	----	----
Band	1	----	1	----	----	----	----	----	----	----	----	1	----	----	----	----	1	----	----	----	----	----
Band, Orchestral	1	----	1	1	----	----	----	----	----	----	----	----	1	----	----	----	1	----	----	----	----	----
Totals, Elementary Grade	2	15	17	5	5	3	2	5	7	1	4	3	2	----	2	5	4	1	2	----	----	2
Secondary Grade.																						
Vocal	1	10	11	----	2	3	5	1	1	1	2	----	----	2	----	1	2	4	----	----	1	1
Vocal, Instrumental	6	28	34	2	5	6	16	3	6	5	4	9	2	4	4	4	4	9	4	2	2	3
Vocal, Instrumental, Orchestral	3	52	55	2	10	10	26	6	14	4	6	6	4	5	3	10	5	8	2	4	4	11
Vocal, Instrumental, Orchestral, Band	3	----	3	----	----	1	1	----	----	1	1	----	1	1	----	1	----	----	1	----	----	----
Vocal, Orchestral	1	5	6	----	3	3	----	----	3	----	----	----	----	----	----	----	3	1	----	----	----	1
Vocal, Orchestral, Band	3	----	3	----	----	1	----	----	3	1	1	----	1	----	----	----	----	2	----	----	1	----
Instrumental	----	16	16	2	2	2	8	2	3	3	2	----	4	2	1	2	1	4	3	1	2	3
Instrumental, Orchestral	----	3	3	----	----	----	2	----	----	1	----	1	1	----	----	----	1	----	----	----	1	2
Instrumental, Orchestral, Band	1	----	1	----	----	----	----	----	1	----	----	1	----	----	----	----	----	----	----	----	1	----
Orchestral	1	----	1	----	----	----	----	----	1	----	----	1	----	----	----	----	----	----	----	----	1	----
Orchestral, Band, Choral	2	----	2	----	1	----	1	----	----	----	----	----	1	----	1	----	1	----	----	----	----	----
Orchestral, Band	3	----	3	----	1	----	----	----	1	----	----	1	2	1	----	1	----	----	----	----	----	----
Band	2	----	2	----	----	----	----	----	1	----	----	1	1	----	----	----	2	----	----	----	----	----
Choral	1	----	1	----	1	----	----	----	----	----	----	----	1	----	----	----	----	----	----	----	----	----
Totals, Secondary Grade	27	114	141	6	25	26	59	12	34	16	16	20	18	15	9	19	19	28	10	7	13	21

*Six persons had less than high or equivalent schooling.

TABLE VII.

Mixed Types (Not Including Vocational).

	Men	Women	Total	Years of academic training beyond high school course				Years of practical experience in vocation				Years of teaching experience				
				1 or more	2 or more	3 or more	4 or more	2 or more	3 or more	6 or more	10 or more	1 or more	2 or more	3 or more	5 or more	8 or more
Elementary Grade.																
Free-hand Drawing, Penmanship		1	1		1											1
Manual Training, Household Science, Household Art, Household Economy		1	1		1										1	
Manual Training, Athletics, Gymnasium	1		1	1				1					1			
Manual Training, Instrumental Drawing, Play and Playground, Athletics	1		1	1											1	
Manual Training, Instrumental Drawing, Play and Playground		1	1		1									1		
Free-hand Drawing, Painting, Vocal Music		1	1		1				1				1			
Free-hand Drawing, Painting, Vocal, Instrumental Music		1	1			1								1		
Free-hand Drawing, Painting, Vocal, Instrumental, Orchestral Music		2	2			1	1						1			1
Free-hand Drawing, Painting, Instrumental, Orchestral Music		1	1				1									1
Free-hand Drawing, Painting, Arts and Crafts, Vocal, Orchestral Music		1	1		1								1			
Free-hand Drawing, Vocal, Orchestral Music		1	1			1						1				
Free-hand Drawing, Painting, Arts and Crafts, Vocal, Instrumental, Orchestral Music		1	1			1						1				
Oral and Dramatic Expression, Play and Playground, Athletics, Gymnasium		1	1		1								1			
Oral and Dramatism Expression, Instrumental Music		1	1				1									
Household Science, Household Arts, Household Economy, Stenography and Typing, Bookkeeping		1	1				1									
Totals, Elementary Grade	2	14	16	2	6	4	4	1	2			2	5	2	2	3
Secondary Grade.																
Manual Training, Ironwork, Agriculture	1		1				1	1							1	
Manual Training, Ironwork, Free-hand Drawing, Painting, Instrumental Drawing, Engineering, Machine Shop Work	1		1				1				1					

TABLE VII—Continued.

Mixed Types (Not Including Vocational).

	Men	Women	Total	Years of academic training beyond high school course				Years of practical experience in vocation				Years of teaching experience				
				1 or more	2 or more	3 or more	4 or more	2 or more	3 or more	6 or more	10 or more	1 or more	2 or more	3 or more	5 or more	8 or more
Secondary Grade—Continued.																
Manual Training, Ironwork, Instrumental Drawing, Engineering, Machine Shop Work	3	-----	3	-----	-----	1	2	-----	1	-----	1	-----	-----	1	1	-----
Manual Training, Ironwork, Instrumental Drawing, Engineering, Machine Shop, Machine Design	1	-----	1	-----	-----	-----	1	-----	-----	1	-----	-----	-----	1	-----	-----
Manual Training, Agriculture	1	-----	1	-----	-----	-----	1	1	-----	-----	-----	-----	-----	1	-----	-----
Manual Training, Free-hand Drawing, Instrumental Drawing, Agriculture	1	-----	1	-----	-----	-----	1	-----	-----	1	-----	1	-----	-----	-----	-----
Manual Training, Instrumental Drawing, Agriculture Farm Mechanics	1	-----	1	-----	-----	1	-----	-----	-----	-----	-----	1	-----	-----	-----	-----
Manual Training, Instrumental Drawing, Engineering	2	-----	2	-----	-----	-----	2	-----	-----	1	-----	-----	-----	-----	-----	1
Manual Training, Instrumental Drawing, Engineering, Machine Shop, Applied Electricity	1	-----	1	-----	-----	-----	1	1	-----	-----	-----	-----	-----	-----	-----	-----
Engineering, Machine Shop, Instrumental Drawing	2	-----	2	-----	-----	-----	2	1	-----	-----	1	-----	-----	-----	-----	-----
Engineering, Instrumental Drawing	3	-----	3	-----	-----	-----	3	-----	-----	-----	1	1	-----	-----	-----	-----
Free-hand Drawing, Painting, Instrumental Drawing, Architecture	2	-----	2	-----	-----	1	1	-----	-----	1	1	-----	-----	-----	-----	-----
Free-hand Drawing, Painting, Oral and Dramatic Expression	-----	1	1	-----	-----	-----	1	-----	-----	-----	-----	-----	-----	-----	-----	1
Instrumental Drawing, Applied Electricity	1	-----	1	1	-----	-----	-----	-----	-----	1	-----	-----	-----	-----	-----	-----
Manual Training, Ironwork, Instrumental Drawing, Arts and Crafts, Stenography and Typing, Bookkeeping	1	-----	1	-----	-----	-----	1	-----	-----	-----	-----	-----	1	-----	-----	-----
Manual Training, Instrumental Drawing, Stenography and Typing, Bookkeeping	1	-----	1	-----	-----	-----	1	-----	-----	1	-----	-----	-----	-----	-----	1
Manual Training, Ironwork, Instrumental Drawing, Stenography and Typing, Bookkeeping	1	-----	1	-----	-----	-----	1	-----	-----	-----	-----	-----	-----	-----	-----	1
Free-hand Drawing, Painting, Instrumental Drawing, Arts and Crafts, Penmanship	2	-----	2	-----	-----	-----	2	-----	-----	-----	1	1	-----	1	-----	-----
Free-hand Drawing, Painting, Stenography and Typing, Bookkeeping, Penmanship	-----	1	1	-----	-----	-----	1	1	-----	-----	-----	-----	-----	-----	-----	1
Free-hand Drawing, Painting, Stenography and Typing, Bookkeeping	-----	2	2	-----	1	-----	1	-----	-----	-----	1	-----	-----	1	-----	1

Free-hand Drawing, Instrumental Drawing, Stenography and Typing		1	1			1					1			1		1
Free-hand Drawing, Painting, Instrumental Drawing, Arts and Crafts, Stenography and Typing, Bookkeeping		2	2				2									
Free-hand Drawing, Painting, Arts and Crafts, Stenography and Typing, Bookkeeping	1		1			1				1						1
Free-hand Drawing, Painting, Arts and Crafts, Penmanship		1	1				1									1
Manual Training, Free-hand Drawing, Painting, Arts and Crafts, Sewing		1	1			1			1							1
Manual Training, Free-hand Drawing, Painting, Instrumental Drawing, Arts and Crafts, Household Science, Household Arts, Household Economy		1	1				1									1
Manual Training, Arts and Crafts, Sewing		1	1		1											1
Free-hand Drawing, Household Science, Household Art, Household Economy		1	1			1								1		
Free-hand Drawing, Painting, Household Science, Household Art, Household Economy		1	1				1									1
Free-hand Drawing, Painting, Instrumental Drawing, Household Science, Household Art, Household Economy		1	1				1									1
Free-hand Drawing, Painting, Arts and Crafts, Household Science, Household Art, Household Economy		2	2				2						1		1	
Free-hand Drawing, Painting, Instrumental Drawing, Household Art, Household Economy		1	1				1					1				
Manual Training, Ironwork, Instrumental Drawing, Athletics	2		2		1		1							2		
Manual Training, Ironwork, Instrumental Drawing, Arts and Crafts, Play and Playground, Athletics	1		1				1		1							
Manual Training, Ironwork, Instrumental Drawing, Play and Playground, Athletics	1		1				1			1						
Manual Training, Free-hand Drawing, Instrumental Drawing, Athletics	1		1		1											1
Manual Training, Instrumental Drawing, Cadet Drill	1		1			1								1		
Manual Training, Ironwork, Instrumental Drawing, Arts and Crafts, Vocal, Orchestral Music	1		1			1								1		
Free-hand Drawing, Painting, Vocal Music		3	3			1	2									2
Free-hand Drawing, Painting, Vocal, Instrumental Music		2	2			1	1							1		1
Free-hand Drawing, Painting, Arts and Crafts, Vocal, Orchestral Music		1	1			1									1	
Free-hand Drawing, Painting, Instrumental Drawing, Arts and Crafts, Vocal, Orchestral Music		1	1				1							1		

TABLE VII—Continued.

Mixed Types (Not Including Vocational).

	Men	Women	Total	Years of academic training beyond high school course				Years of practical experience in vocation				Years of teaching experience				
				1 or more	2 or more	3 or more	4 or more	2 or more	3 or more	6 or more	10 or more	1 or more	2 or more	3 or more	5 or more	8 or more
Secondary Grade—Continued.																
Free-hand Drawing, Painting, Arts and Crafts, Vocal, Instrumental, Orchestral Music		1	1				1									1
Free-hand Drawing, Painting, Vocal, Instrumental, Orchestral Music		1	1		1										1	
Free-hand Drawing, Painting, Arts and Crafts, Choral Music		1	1				1									
Free-hand Drawing, Painting, Arts and Crafts, Vocal, Instrumental Music		1	1				1							1		
Free-hand Drawing, Painting, Arts and Crafts, Vocal Music		1	1			1										1
Free-hand Drawing, Instrumental Drawing, Vocal, Orchestral Music		1	1				1							1		
Free-hand Drawing, Vocal Music		2	2		1		1									1
Free-hand Drawing, Vocal, Instrumental Music		1	1				1								1	
Instrumental Drawing, Vocal, Instrumental and Orchestral Music		1	1				1					1				
Manual Training, Ironwork, Instrumental Drawing, Engineering, Machine Design, Athletics	1		1				1			1						
Oral and Dramatic Expression, Physical Education and Training, Play and Playground		3	3				3									1
Oral and Dramatic Expression, Physical Education and Training		6	6		1		5		1				1	1	1	3
Oral and Dramatic Expression, Physical Education and Training, Play and Playground, Athletics	2		2				2			1						1
Oral and Dramatic Expression, Physical Education and Training, Athletics		1	1				1					1				
Engineering, Instrumental Drawing, Cadet Drill	1		1				1			1						
Journalism, Athletics	1		1				1	1								
Agriculture, Farm Mechanics, Instrumental Drawing, Cadet Drill	1		1				1		1						1	
Agriculture, Athletics	1		1				1									

Engineering, Instrumental Drawing, Cadet Drill, Athletics	1		1				1									
Agriculture, Bookkeeping, Cadet Drill	1		1				1	1					1			
Vocal Music, Oral and Dramatic Expression, Physical Education and Training		1	1				1		1					1		
Vocal and Instrumental Music, Oral and Dramatic Expression, Physical Education and Training, Play and Playground		1	1			1			1							
Household Art, Stenography and Typing, Bookkeeping		1	1				1							1		
Household Art, Stenography and Typing		1	1	1							1			1		
Household Science, Household Art, Household Economy, Physical Education and Training		1	1				1						1			
Household Science, Household Economy, Physical Education and Training		1	1				1									
Household Science, Household Art, Household Economy, Instrumental Music		2	2				2							1		
Household Art, Vocal, Instrumental and Orchestral Music		1	1		1						1			1		
Household Science, Household Art, Household Economy, Vocal, Instrumental Music		1	1				1									
Vocal Music, Athletics	1		1			1		1								
Physical Education and Training, Play and Playground, Athletics, Penmanship	1		1				1					1				
Athletics, Gymnasium, Stenography and Typing, Bookkeeping	1		1				1	1								
Cadet Drill, Athletics, Bookkeeping	1		1				1									
Stenography and Typing, Bookkeeping, Physical Education and Training, Instrumental, Orchestral Music		1	1				1						1			
Vocal Music, Penmanship		1	1			1										1
Vocal, Instrumental, Orchestral Music, Stenography and Typing, Bookkeeping, Penmanship		1	1				1							1		
Instrumental Music, Stenography and Typing		2	2				2			1					1	
Totals, Secondary Grade	46	59	105	2	8	16	79	9	7	12	10	8	6	22	9	27

TABLE VIII.

Mixed Types (Including Vocational).

	Men	Women	Total	Years of academic training beyond high school course*				Years of practical experience in vocation			Years of teaching experience				
				1 or more	2 or more	3 or more	4 or more	3 or more	6 or more	10 or more	1 or more	2 or more	3 or more	5 or more	8 or more
Secondary Grade.															
Manual Training, Ironwork, Instrumental Drawing, Machine Shop, Tool, Die, Jig and Metal Pattern Making and Designing, Gas and Steam Engine and Machine Construction, Installation of Machinery and Shop Equipping	1		1			1				1					1
Manual Training, Bench and Cabinet Work, Woodworking Machinery and Wood Manufacture	1		1							1					
Manual Training, Machine Shop, Ironwork	1		1		1					1		1			
Manual Training, Woodworking Machinery and Wood Manufacture, Carpentry	1		1	1					1						
Manual Training, Carpentry	1		1							1				1	
Manual Training, Instrumental Drawing, Carpentry	2		2		1				1	1		1			1
Manual Training, Instrumental Drawing, Bench and Cabinet Work, Carpentry	1		1			1			1						
Manual Training, Instrumental Drawing, Arts and Crafts, Bench and Cabinet Work, Woodworking Machinery and Wood Manufacture	1		1							1					1
Manual Training, House Designing, Woodworking Machinery and Wood Manufacture, Carpentry, Concrete and Cement Work	1		1							1	1				
Manual Training, Applied Electricity	1		1		1					1			1		
Machine Shop	1		1							1					1
Instrumental Drawing, Automobile Construction and Repairing, Machine Shop, Machine Design	1		1	1						1					
Automobile Construction and Repairing	1		1	1						1					
Sewing, Art Needlework, Dress and Costume Design		1	1		1				1				1		
Manual Training, Ironwork, Instrumental Drawing, Salesmanship, Stenography and Typing, Bookkeeping, Engineering	1		1				1		1					1	
Engineering; Machine Shop; Auto Operation, Construction and Repairing; Instrumental Drawing	2		2				2	1		1					

Engineering, Instrumental Drawing, Applied Electricity, Electric Salesmanship	1	-----	1	-----	-----	-----	1	-----	-----	1	-----	-----	1	-----	----
Journalism	-----	1	1	-----	-----	-----	1	1	-----	-----	-----	-----	-----	-----	----
Agriculture	-----	1	1	-----	-----	-----	1	-----	-----	1	-----	-----	1	-----	----
Household Art, Dressmaking, Tailoring	-----	1	1	1	-----	-----	-----	-----	-----	1	-----	-----	-----	-----	----
Instrumental Drawing, Machine Design, Mechanical Drafting	1	-----	1	-----	-----	1	-----	1	-----	-----	-----	-----	-----	-----	1
Totals, Secondary Grade	19	4	23	4	4	3	6	3	5	15	1	2	4	2	5

*Six persons had less than one year of schooling beyond a secondary school course.

TABLE IX.

Vocational Arts Type.

	Men	Women	Total	Years of academic training in high school				Years of academic training beyond high school course				Years of practical experience in vocation				Teaching experience
				1 or more	2 or more	3 or more	4 or more	1 or more	2 or more	3 or more	4 or more	4 or more	6 or more	10 or more	15 or more	
Elementary Grade.																
Agriculture and Gardening	1	1	2					1		1			1			1
Dressmaking and Sewing		1	1					1							1	
Dressmaking, Sewing and Needlework		1	1		1										1	1
Sewing, Cooking		1	1		1											1
Totals, Elementary Grade	1	4	5		2			2		1			1		2	3
Secondary Grade.																
Bench and Cabinet Work, Woodworking Machinery and Wood Manufacture	1		1	1										1		
Bench and Cabinet Work	1		1	1									1			
Carpentry and Bench Work	3		3		2		1						1	1	1	
Carpentry, Bench and Cabinet Work, Woodworking Machinery and Wood Manufacture	4		4	2				1						1	3	
Carpentry, Woodworking Machinery and Wood Manufacturing	1		1	1										1		
Carpentry, Bench and Cabinet Work, Ironwork	1		1				1								1	
Bench and Cabinet Work, Woodworking Machinery and Wood Manufacture, Instrumental Drawing	1		1			1									1	1
Bench and Cabinet Work, Wood Turning, Pattern Making	1		1										1			
Pattern Making	3		3	2									1	1	1	
Pattern Making, Wood Turning, Instrumental Drawing	1		1					1						1		
Pattern Making, Wood Turning, Carpentry and Cabinet Work, Woodworking Machinery and Wood Manufacture	1		1	1											1	
Pattern Making, Molding and Other Foundry Work	1		1										1			1
Machine Shop	1		1												1	
Machine Shop, Automobile Repairing and Construction	1		1		1									1		
Machinery Installation, Care and Repair	1		1	1											1	
Blacksmithing	1		1												1	
Applied Electricity	2		2			1								1	1	1

Agriculture	1	----	1	----	----	----	----	----	----	----	1	----	----	----	1	----
Shoemaking	1	----	1	----	----	----	----	----	----	----	----	----	----	----	1	----
Printing	7	----	7	1	----	----	1	2	----	1	----	----	----	1	6	----
Printing and Bookbinding	1	----	1	----	----	----	1	----	----	----	----	----	----	----	1	----
Printing and Journalism	2	----	2	----	1	----	----	----	----	----	1	----	----	1	1	1
Photography	1	----	1	----	----	----	----	----	----	----	1	----	----	1	----	----
Instrumental Drawing	1	----	1	----	----	----	----	1	----	----	----	1	----	----	----	----
Bookkeeping and Accountancy, Commercial Economics, Commercial Law	1	----	1	----	----	----	----	----	----	----	1	1	----	----	----	----
Dressmaking	----	1	1	----	1	----	----	----	----	----	----	----	1	----	----	----
Dressmaking and Sewing	----	2	2	----	----	----	1	----	----	----	----	----	----	1	1	----
Dressmaking, Sewing, Tailoring	----	3	3	1	----	----	----	----	2	----	----	2	----	----	1	2
Dressmaking, Sewing, Tailoring, Needlework	----	1	1	1	----	----	----	----	----	----	----	----	----	----	1	----
Dressmaking, Sewing, Tailoring, Dress and Costume Design	----	1	1	----	----	----	1	----	----	----	----	----	----	1	----	1
Dressmaking, Sewing, Needlework, Millinery	----	1	1	----	1	----	----	----	----	----	----	1	----	----	----	1
Dressmaking and Millinery*	----	1	1	----	----	----	----	----	1	----	----	----	----	----	----	1
Millinery†	----	10	10	----	3	----	4	----	----	----	----	----	1	2	6	1
Totals, Secondary Grade	40	20	60	12	9	2	10	5	3	1	4	5	7	15	31	10

*This person had an equivalent of three years' experience as expert worker.

†One credential in Millinery was granted on three years' high, one year prevocational training in milinery in school, two years' practical experience, and four years' teaching millinery in night schools, five nights a week.

TABLE X.

Grand Totals.

	Men	Women	Total	Less than 5 years beyond ele. sch.	Years of academic training beyond high school course				Private training in solid year units			Years of practical experience in vocation					Years of teaching experience				
					1 or more	2 or more	3 or more	4 or more	1 or more	2 or more	4 or more	1 or more	2 or more	3 or more	6 or more	10 or more	1 or more	2 or more	3 or more	5 or more	8 or more
Elementary Grade.																					
Manual and Fine Arts Type	6	11	17	3	1	2	4	7	----	----	----	----	1	1	1	1	1	----	1	5	5
Technical Arts Type	----	7	7	----	1	2	1	3	----	----	----	----	1	1	----	----	1	----	----	1	1
Household Arts Type	----	11	11	----	2	7	1	1	----	----	----	----	----	1	1	1	1	4	2	1	1
Commercial Type	----	4	4	----	1	2	----	1	----	----	----	2	----	----	----	----	1	----	1	----	1
Physical Culture Type	3	2	5	----	----	2	3	----	----	----	----	----	1	----	----	----	2	----	----	----	---
Music Type*	2	15	17	2	5	5	3	2	5	7	1	----	4	3	2	----	----	2	5	4	1
Mixed Types (not including Vocational)	2	14	16	----	2	6	4	4	----	----	----	----	1	2	----	----	2	5	2	2	3
Vocational Arts Type†	1	4	5	2	2	----	1	----	----	----	----	----	----	----	1	2	3	----	----	----	---
Totals, Elementary Grade	14	68	82	7	14	26	17	18	5	7	1	2	8	8	5	4	11	11	11	13	12
Secondary Grade.																					
Manual and Fine Arts Type	78	53	131	9	9	31	27	55	----	----	----	----	15	20	12	18	13	14	26	28	26
Technical Arts Type	26	27	53	----	8	1	7	37	----	----	----	----	7	8	10	11	5	1	3	8	4
Household Arts Type	----	65	65	----	1	8	15	41	----	----	----	----	10	5	4	2	11	5	10	11	13
Commercial Type	50	79	129	7	18	28	26	50	----	----	----	21	16	20	21	11	11	12	17	25	38
Physical Culture Type	26	26	52	1	2	3	12	34	----	----	----	----	5	5	5	1	4	7	7	7	6
Music Type*	27	114	141	25	6	25	26	59	12	34	16	----	16	20	18	----	15	9	19	19	28
Mixed Types (not including Vocational)	46	59	105	----	2	8	16	79	----	----	----	----	9	7	12	10	8	6	22	9	27
Mixed Types (including Vocational)	19	4	23	6	4	4	3	6	----	----	----	----	----	3	5	15	1	2	4	2	5
Vocational Arts Type†	40	20	60	47	5	3	1	4	----	----	----	----	----	7	7	46	10	----	----	----	---
Totals, Secondary Grade	312	447	759	95	55	111	133	365	12	34	16	21	78	95	94	114	78	56	108	109	147
Grand totals, both grades	326	515	841	102	69	137	150	383	17	41	17	23	86	103	99	118	89	67	119	122	159

*Twelve of the 158 persons granted music credentials had two or more years of private teaching experience, 7 four or more years, 13 six or more years, and 23 eight or more years of such experience, making a total of 55 persons who had more than two years of such experience.

†Fourteen of the 65 persons granted vocational arts credentials had no secondary school training, 12 had more than one year of such training, 11 more than two years, 2 more than three years, 10 more than four years, and 16 more than five years of training beyond an elementary school course. Thirty-three of the above persons had more than fifteen years' experience each in their vocations.

TABLE XI.

Number of Persons Recommended by Credentials for Certification in the Various Special Subjects.

MANUAL AND FINE ARTS TYPE.

Elementary Grade.

Manual Training	10
Instrumental Drawing	7
Arts and Crafts	9
Free-hand Drawing, Painting and Design	19

Secondary Grade.

Woodwork	97
Instrumental Drawing	105
Arts and Crafts	98
Free-hand Drawing, Painting and Design	102
Ironwork	34

TECHNICAL ARTS TYPE.

Elementary Grade.

Instruction of Deaf Children	3
Oral and Dramatic Expression	5
Agriculture	1

Secondary Grade.

Engineering	27
Instrumental Drawing	13
Applied Electricity	4
Machine Design	2
Agriculture	21
Farm Mechanics	3
Landscape Design	1
Architecture	5
Oral and Dramatic Expression	24
Library Craft, Technique and Use	21
Journalism	3
Advertising	1
Machine Shop Work	8

HOUSEHOLD ARTS TYPE.

Elementary Grade.

Household Science and Economy	13
Household Art and Economy	13

Secondary Grade.

Household Science and Economy	72
Household Art and Economy	81
First Year Sewing	1
Sewing	4
Art Needlework	1
Millinery	1

COMMERCIAL TYPE.

Elementary Grade.

Stenography and Typing	4
Bookkeeping	4
Penmanship	3

Secondary Grade.

Stenography and Typing	135
Bookkeeping	114
Penmanship	34
Banking and Finance	6
Salesmanship	7
Commercial Law	2
Commercial Spelling	1
Typing	1

PHYSICAL CULTURE TYPE.

Elementary Grade.

Physical Education and Training	3
Play and Playground Management	6
Gymnasium	3
Athletics	4

Secondary Grade.

Physical Education and Training	54
Play and Playground Management	34
Gymnasium	10
Athletics	52
Cadet Drill	15

MUSIC TYPE.

Elementary Grade.

Vocal Music	20
Piano Music	18
Orchestral Music	11
Band Music	2

Secondary Grade.

Vocal Music	138
Piano Music	38
Orchestral Music	88
Band Music	14
Choral Music	4

VOCATIONAL ARTS TYPE.

Elementary Grade.

Agriculture	1
Gardening	1
Dressmaking	2
Sewing	3
Needlework	1
Cooking	1

Secondary Grade.

Bench and Cabinet Work	16
Woodworking Machinery and Wood Manufacture	11
Ironwork	1
Carpentry	15
Instrumental Drawing	3
Wood Turning	3
Pattern Making	8
Free-hand Drawing	1
Molding and other Foundry Work	1
Machine Shop Work	7
Automobile Repair and Construction	5
Machinery Installation, Care and Repair	1
Blacksmithing	1
Applied Electricity	4
Agriculture	2
Shoemaking	1
Printing	10
Bookbinding	1
Journalism	3
Photography	1
Bookkeeping	1
Commercial Economics	1
Commercial Law	1
Dressmaking	11
Sewing	9
Tailoring	7
Needlework	3
Dress and Costume Design	2
Millinery	12
Electrical Salesmanship	1

Mechanical Drafting	1
Engineering	2
Engine and Machine Construction	1
Installation of Machine and Shop Equipment	1
House Designing	1
Concrete and Cement Work	1
Machine Design	1

The above segregation does not represent the number of credentials granted by the State Board of Education. In many instances two or more subjects were included in a single credential. The actual number of special credentials of each type granted is given in Table XII.

TABLE XII.

Number of Special Credentials of Each Type and Each Grade Granted.*

	Elementary	Secondary
Manual and Fine Arts	17	131
Technical Arts	7	53
Household Arts	11	65
Commercial	4	129
Music	17	141
Physical Culture	5	52
Vocational Arts	5	60
Manual and Fine Arts and Vocational Arts	--	15
Manual and Fine Arts and Household Arts	1	9
Manual and Fine Arts and Physical Culture	3	6
Manual and Fine Arts and Technical Arts	--	21
Manual and Fine Arts and Commercial	1	13
Manual and Fine Arts and Music	8	18
Technical Arts and Physical Culture	1	17
Music and Commercial	--	4
Technical Arts and Music	1	---
Music and Physical Culture	--	1
Physical Culture and Commercial	--	3
Household Arts and Music	--	4
Household Arts and Physical Culture	--	2
Household Arts and Commercial	1	2
Technical Arts and Vocational Arts	--	5
Household Arts and Vocational Arts	--	1
Manual and Fine Arts, Technical Arts and Vocational Arts	--	1
Manual and Fine Arts, Commercial and Vocational Arts	--	1
Manual and Fine Arts, Technical Arts and Physical Culture	--	1
Technical Arts, Commercial and Physical Culture	--	1
Commercial, Physical Culture and Music	--	1
Music, Technical Arts and Physical Culture	--	2
Totals	82	759
Grand total		841

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*A number of temporary special credentials have been reissued; also, in a few cases both elementary and secondary credentials have been granted to the same individual, and in some other cases a second credential has been granted in order to qualify the individual to teach a subject not included in the previous credential issued. Thus the total number of credentials listed above does not represent the total number of individuals having received special credentials, but somewhat exceeds that number.

DISCUSSION OF TABLE I.

A reference to Table I, pages 262–263, will reveal the fact that the board has generally accepted no equivalents for the first four years of schooling beyond an elementary school course upon the part of all applicants for special credentials of the Manual and Fine Arts Type.

Of the 148 persons who secured credentials of this type, but 12 had less than five full years of schooling beyond an elementary school course. These were teachers with years of successful practical and teaching experience, who held special certificates and were in the service in the state of California. In each case where a person fell short of the required eight years of schooling beyond an elementary school course, sufficient practical experience in the occupation and teaching experience in the subject were required to make up the deficiency in school training, but in no case was practical or teaching experience given more than one-half credit in making up such deficiency.

Of the 148 persons granted this type of credential, 69, or almost half, had more than two years of practical experience, and 119, or 80 per cent, had teaching experience ranging from one or more to eight or more years. The amount of teaching experience of the persons granted the credential in manual and industrial subjects was about equal to that of the persons granted the credential in fine arts subjects, while about 63 per cent of the former had in addition more than two years of practical experience in the special line.

Only six of the 86 persons receiving the credential in manual arts subjects were women, while but ten of the 68 persons receiving the credential in fine arts were men.

DISCUSSION OF TABLE II.

Of the 53 persons who received credentials of the Technical Arts Type, 37 had four or more years of collegiate training, and only one person who did not have four years of such training was granted a credential in engineering and he had years of practical experience as an engineer.

Of the 11 persons granted credentials in agriculture, but two had less than a full four years collegiate course and these likewise had both practical and teaching experience.

Of the eight persons granted secondary credentials in oral and dramatic expression, but three had less than four years of collegiate training. Of these three, one had from six to ten years and two had more than ten years of practical experience; and one had more than three years, one more than five years, and one more than eight years of teaching experience.

Twenty credentials were granted in library craft, technique and use. Ten of the persons receiving these credentials had full collegiate courses;

three had more than three years and seven had more than one year of collegiate work. Those persons having less than the full collegiate requirement had full equivalents in practical and teaching experience, as shown by a reference to Table II, page 264.

Of the eight persons receiving the credential in oral and dramatic expression, but two were men. All of the persons receiving the credential in library craft, technique and use, were women, and all of the persons receiving the credential in engineering were men.

In general, Table II shows that it is possible to maintain a much higher scholastic standard for credentials of the Technical Arts Type than for the Manual and Fine Arts Type.

DISCUSSION OF TABLE III.

Table III, page 265, shows that most of the teachers prepared in household science are also prepared in household art, since 69 of the 76 credentials of Household Arts Type granted were in both the science and the art of the subject.

Of the 65 persons granted the secondary credential in this subject, 41 had completed a full collegiate course, 15 had completed more than three years, eight more than two years, and one more than one year of such a course. All of the persons who secured the credential in household science or in household art and who had less than four years of schooling beyond a high school course were experienced teachers in this field, and most of them were already in the service in this state.

Here, again, the scholastic standard maintained by the board is much higher than that maintained for the Manual and Fine Arts Type of credential, and fully as high as that maintained for the Technical Arts Type.

DISCUSSION OF TABLE IV.

As shown by Table IV, page 266, fifty of the 133 credentials granted in commercial subjects were secured by men and 83 by women. The standard of academic scholarship maintained for this credential was about equal to that maintained for the Manual and Fine Arts Type. In view of the fact that most of the background subjects in the commercial field have been taught for years in the higher institutions, it would seem that the standard of academic scholarship in this field should be higher than it is. However, until very recently no institution of collegiate grade in this state attempted to prepare persons for teaching commercial subjects. The supply of teachers for this field has been secured largely from the teaching force of private commercial schools. In the past the standard of academic scholarship maintained by such schools was not especially high, their main function being to prepare for the commercial occupations alone.

Of the persons securing the commercial credential, only seven had less than five years of schooling beyond an elementary course of instruction. All of these persons had long years of successful teaching experience in commercial subjects and most of them had extensive practical experience in their various special fields.

Of the 133 persons receiving this credential, 106 had teaching experience—39 having had more than eight years, 25 more than five years, 18 more than three years, 12 more than two years and 12 more than one year. Ninety-one of these persons had practical experience—11 having had more than ten years, 21 more than six years, 20 more than three years, 16 more than two years, and 23 more than one year.

The above figures show clearly that there is growing up an insistent demand for teachers of commercial subjects with practical experience in the commercial field. This is entirely natural since this subject, as taught in the secondary schools, is fundamentally a vocational subject.

DISCUSSION OF TABLE V.

Of the five persons granted elementary credentials of the Physical Culture Type, three had the complete academic requirement of three years of training beyond a high school course; two had but two years of such training, although both of these persons had teaching experience, and one had more than two years of practical experience in the special subject.

Of the 52 persons granted secondary credentials of the Physical Culture Type, 26 were men and 26 were women. Thirty-four had four or more years of schooling beyond a high school course, 12 three or more years, three two or more years and two one or more years, while one had less academic training.

The academic scholarship of the persons who received this type of credential appears to be about equal to that of those who received the Technical and Household Arts Types.

DISCUSSION OF TABLE VI.

One hundred fifty-eight persons were granted credentials of the Music Type. Of this number 29 were men and 129 were women.

Sixty-one of these had more than four years of training beyond a secondary school course, 29 had more than three years, 30 had more than two years, 11 had more than one year, 21 had more than a secondary education, while six had less than a secondary school training. However, 16 had more than four years, 34 more than two years and 12 more than one year of solid private training. The addition of this private training to the school training increases the total educational qualifications of these persons far beyond that expressed in terms of school training, as shown in Table VI, page 268.

Twenty of the above persons had more than six years, 23 more than three years and 16 more than two years of practical experience in music as a vocation.

Of the 158 persons who received this credential, 102 had more than one year each of public school teaching experience. Of these, 29 had more than eight years, 23 more than five years, 24 more than three years, 11 more than two years, and 15 more than one year of such experience. Fifty-five had more than two years each of experience as private teachers, 23 had more than eight years, 13 more than six years, seven more than four years, and 12 more than two years.

Here, again, the average academic training of those receiving the credential is much lower than the average for those receiving credentials of the Household Arts and Technical Arts types. However, the schooling and private instruction and the practical and teaching experience, taken together, raise the qualification of this group to as high a standard as that of any other. The academic schooling of musicians is usually badly broken up. In many cases they have not completed any particular course in a secondary school. This is probably due to the fact that in years past they either had to give up their musical training during the high school period or their chance of graduating from such a school.

DISCUSSION OF TABLE VII.

But few generalizations can be made upon the mixed type as set forth in Table VII, page 269.

The only combinations that appear to repeat themselves are those to be found in the Manual and Fine Arts and Technical Arts types and in Oral and Dramatic Expression and Physical Education.

Exclusive of such credentials as contain vocational subjects, there were granted 121 credentials of mixed types. Of these 48 were granted to men and 73 to women. Sixteen of these were of elementary and 105 of secondary grade.

Of the persons who received the secondary grade, 79, or 75 per cent, had more than four years, 16 more than three years, eight more than two years, two more than one year and *none* less than one year of schooling beyond a high school course. However, to balance this, the total number having had practical experience is relatively much smaller. Only ten of the 105 had more than ten years of practical experience, 12 more than six years, seven more than three years, and nine more than two years, making a total of but 38 persons with practical experience.

Seventy-two of the 105 had teaching experience. Of these, 27 had more than eight years each, nine more than five years, 22 more than three years, six more than two years, and eight more than one year of such experience.

DISCUSSION OF TABLE VIII.

Twenty-three credentials of mixed types which included vocational subjects were granted. Of these 19 were secured by men and four by women.

The standard of academic scholarship for this group appears to be a trifle lower than that of the Manual and Fine Arts group, but all of these persons had more than three years of practical experience. Of the 23 persons, six had more than four years of academic training beyond a high school course, three had more than three years, four more than two years, four more than one year, and six persons had less than one year beyond a high school course. Fifteen had more than ten years of practical experience, five more than six years and three more than three years, which accounts for all who received the credential. Five had more than eight years of teaching experience, two more than five years, four more than three years, two more than two years, and one more than one year. More than half of these persons were in the teaching service in this state and consequently held certificates in manual training. These certificates were previously granted largely upon practical experience, and their holders had demonstrated their ability to teach the subject satisfactorily.

DISCUSSION OF TABLE IX.

The statistics relating to the credentials of the Vocational Arts Type granted will be found in Table IX, pages 276–277.

But five elementary credentials of this type were granted. One of these, a credential in agriculture and gardening, was granted to a man and the remainder were granted to women. One of these persons had more than three years of training beyond a high school course, two more than one year of such training, and two had less than three years of secondary schooling. Two of these persons had more than fifteen years of practical experience, one more than six years, and the other two had teaching experience in their subjects.

Sixty secondary credentials in vocational subjects were granted. Of these, 40 went to men and 20 to women. Four of the 60 had more than four years of schooling beyond a high school course, one more than three years, three more than two years, five more than one year, and ten had completed a secondary school course of four or more years, making a total of 23 persons who had a high school education or more. Two persons had three or more years, nine two or more years, and 12 one or more years of secondary school training, while 14 had less than one year of training beyond a public elementary school course.

Thus, it will be seen, almost one-fourth of the persons granted the credential of the Vocational Arts Type had practically no schooling beyond that secured in the elementary grades. One-fifth of the total number had little schooling beyond that secured in the first year of a high school course, and only 38 per cent had a high school education or more. On the other hand, these persons all had a large amount of practical experience to offset this lack of academic schooling. None had less than four years of such experience; 31, or more than half, had more than fifteen years of practical experience; 15, or one-fourth, had more than ten years; seven had more than six years, and five had more than four years of such experience. Of the 60 persons, ten also had teaching experience. This teaching experience was largely confined to regular elementary school work.

DISCUSSION OF TABLE X.

Table X, page 278, gives the totals of the analyses of credentials of the various types granted. This table shows that there were 82 credentials of elementary grade granted, and that 14 of these went to men and 68 to women; that there were 759 credentials of the secondary grade, of which 312 went to men and 447 to women; that there were 841 credentials of elementary and secondary grade granted, and that 326 of these went to men and 515 to women.

Of the 82 persons who received elementary credentials, 18 had more than eight years of schooling beyond an elementary school course, 17 more than seven years, 26 more than six years, 14 more than five years, and six less than five years. Four of these persons had more than ten years of practical experience in their occupations, 5 more than six years, eight more than three years, eight more than two years, and two more than one year. Twelve had more than eight years of teaching experience, 13 more than five years, 11 more than three years, 11 more than two years, and 11 more than one year.

Of the 759 persons who received secondary credentials, 365 had more than eight years of training beyond an elementary school course, 133 more than seven years, 111 more than six years, 55 more than five years, and 75 less than five years. Of these persons, 114 had more than ten years each of practical experience in their occupations, 94 more than six years, 95 more than three years, 78 more than two years, and 21 more than one year. One hundred forty-seven had more than eight years of teaching experience, 109 more than five years, 108 more than three years, 56 more than two years, and 78 more than one year.

Of the 841 persons who were granted special credentials, 383, or 45 per cent, had more than eight years of training beyond an elementary school course; 150, or 18 per cent, had more than seven years; 137, or 16 per cent, had more than six years; 69, or 8 per cent, had more than five years, and 102, or 12 per cent, had less than five years.

Of the above, 118 had more than ten years of practical experience, 99 more than six years, 103 more than three years, 86 more than two years, and 23 more than one year. One hundred fifty-nine had more than eight years of public school teaching experience, 122 had more than five years, 119 had more than three years, 67 more than two years, and 89 more than one year, making a total of 556 persons, or 66 per cent, who had teaching experience.

The average of scholastic scholarship is lowered by the inclusion of the Vocational Arts and Music types of credential. As will be observed by a glance at Table X, many of the candidates for the music credential had private training, and practical experience was substituted for the lack of academic training upon the part of those who received credentials in vocational subjects.

SOME DIFFICULTIES OF THE SPECIAL CERTIFICATE PROBLEM.

It is not only desirable, but it is necessary, to maintain a high standard for certification in special subjects. In securing a position, the holder of a credential or certificate in special subjects uses it as evidence of his general educational qualifications and also of his superior knowledge in the special subject.

In order, then, to protect employing boards, the State Board of Education must maintain a high general standard of scholarship, and it must also maintain a very high standard of scholarship in the special field. With the standard of scholarship maintained by your honorable body in the special subjects, it is exceedingly difficult for any person to secure certification in more than one, or, at most, in more than two special subjects. While a high standard of scholarship in the special field is desirable, it would be possible to maintain a standard so high that a sufficient number of persons could not be supplied for the service. In this case the salary schedule of special teachers would naturally become unduly high. In short, it would be possible to maintain such a professional standard as would artificially increase the cost of instruction in the special fields to the extent that these subjects would not be maintained in the high schools of the state. However, the standard which you at present maintain is not sufficiently high to bring about this situation. At the same time certain difficulties have arisen which are very real.

I have pointed out elsewhere in this report that 109 of the high schools in this state employ six or less teachers each. These high schools as a rule are located in rural communities. Courses of instruction in the special subjects are perhaps more essential in this type of school than in the city school, because the pupils attending the city schools have more opportunities of getting into touch first-hand with the special fields of learning than do the pupils of the rural districts.

I am sure that you will agree that the rural high school should maintain special courses in music, in art, in household arts, and in industrial arts or agriculture or in both. At present nearly all of these high schools maintain courses in commercial subjects.

Thus we have six special subjects, most, if not all, of which seem to be desirable for each high school in this state. Assuming that a special teacher can handle but one of these subjects, in order to cover the ground it would be necessary to have the services of six special teachers. This of course would be manifestly impossible when we take into consideration the fact that the special teacher may not teach any subjects other than those enumerated in his certificate.

Under the present method of certification there is no possible solution for this situation. The small high school has to employ a sufficient number of teachers with regular high school certificates to carry on all of the regular high school work. If, after this has been done, sufficient money remains, one or more special teachers may be employed. Usually a high school of this type can not afford to employ more than one or two special teachers. If the other special subjects are maintained they have to be taught by teachers holding regular certificates. In most cases these teachers have had no preparation for handling this special work, nor do they desire to teach it, but too often it is the only condition under which the subjects can be maintained.

Certification in Major and Minor Subjects Suggested.

Two possibilities leading to a partial solution of this problem suggest themselves. The first of these is a change in your regulations governing special certification, which shall provide for the granting of certificates in major and minor subjects. Should such a change be made a subject should be listed as a major subject only when the candidate has a complete grasp of the same and when he is fully qualified to accept a position as a full-time teacher in the special subject; and a subject should be listed as a minor subject when the candidate has a sufficient grasp of the same to teach a class in it while under employment as a teacher of one or more of the major subjects.

The danger that a holder of such a certificate might pose as a master of a minor subject may be obviated by providing that where a certificate in special subjects segregates the same as major or minor subjects, such certificate shall authorize the holder thereof to accept full-time employment only to teach one or more of the major subjects or one or more of the major and minor subjects combined; and by providing, further, that the holder of such a certificate shall not be authorized to accept a position to teach, nor may he be permitted to teach under the authority of such certificate, minor subjects for more than half-time, nor may the holder of such a certificate be permitted to teach courses other than elementary, first-year, or first-unit courses in such minor subjects in any public high school in the state.

This partial solution of the problem is suggested by the fact that many persons have applied for certification in a second special subject, and while they are not able to qualify fully under the standard maintained by your honorable body for the special subject, yet they have a fair knowledge of the same, in fact, a much greater knowledge than the average regular high school teacher who will probably be called upon to teach the subject if the special teacher can not be certificated in it. The change suggested here can be made by your honorable body without any additional legislation. I would therefore recommend that you take this matter under advisement as soon as possible.

Suggestion That Special Teachers Be Authorized to Teach Certain Regular Branches.

The second suggestion is that provision be made giving the State Board of Education the power to provide general regulations under which institutions granting secondary credentials in special subjects may be authorized to include in the credential such regular high school subjects as the candidate is competent to teach—said competency to be based upon a certain specified number of units of college credit in each of the subjects so added; that the State Board of Education be authorized to write into the secondary credentials in special subjects issued by it such of the common high school branches as the candidate may be competent to teach, and that county or city and county boards of education be authorized to grant special certificates upon these credentials.

This would not add to the burden of handling the special credential problem by institutions or by the State Board of Education. It has been customary to have filed in this office a transcript of the work done in college by the applicants for special certification. These transcripts give a clear record of the units of work covered in each of the high school branches with the standing achieved therein.

As the matter now stands, the holder of a regular high school certificate may, under the law, teach any subject, regular or special, that may be maintained in any high school in the state. Thus a regular high school teacher trained in one field of knowledge may, and often does, accept employment to give instruction in a field remote from the one in which he has had his college training. Teachers frequently teach in the high school subjects in which they have had no college training whatever. It will therefore be seen that the extending of the privilege of teaching certain specified high school subjects to special teachers, if safeguarded as suggested above, will be less likely to lead to abuse than the present method of handling the general certification.

I wish to call your attention to the fact that most of the credentials issued by your honorable body in the Technical Arts, the Household Arts and in Physical Education were granted to persons who had more than the usual college training. Indeed, in many cases the special training was secured after the individual had graduated from a reputable college or university.

Specific instances have occurred during the last year which lead me to believe that it would sometimes be a protection to the pupils of the high schools of this state if certain special teachers were authorized to teach some of the high school branches. I have in mind one case in which a special credential was granted to a college graduate who had two years of postgraduate work at a university, making a total of six years of collegiate training. The high school board employing this young man as an agriculture teacher desired to have him teach the botany class. Transcripts of courses taken by this candidate in the two institutions mentioned showed that he had nearly forty college credits in botany. Under the law you are not authorized to grant to him the privilege of teaching that subject and it was necessary to so notify the school employing him. As a result, botany was taught in that school by a regular high school teacher who had no college training whatever in the subject. This is not an isolated case; it represents a situation that is constantly arising in the small high schools in this state.

Your attention is directed to the fact that, taken as a whole, the household arts teachers and the agriculture teachers who have completed college courses are about the only persons employed in the California schools who have had sufficient training in the subjects of biology and organic chemistry to handle them successfully in the high school. As a rule the household arts teacher, trained in a reputable college, has had much more chemistry than the average high school teacher, and frequently more than those teachers who made this subject a major in their college course. Further, most of the engineers to whom you have granted special credentials submitted evidence of having had training in mathematics and science which was far in excess of the training possessed by most of the high school teachers.

During the last year your Commissioner was frequently consulted by high school principals who desired to employ teachers of special subjects—agriculture, manual training, or household arts—who could teach something besides their specialty. These requests invariably came from small rural high schools that were very anxious to introduce the special subjects. In most cases they failed to find teachers qualified to handle both special and general subjects. In some instances they did not introduce special work, in others regular teachers, indifferently trained in the special subjects, were employed to do the work.

In concluding this statement, I wish to say that while the elementary school aims to provide a common education for all children, the high school aims to provide many special courses of instruction which will fit many types of minds and will prepare for many different future occupations. Fundamentally, the secondary school is a school of special subjects, all subjects taught therein being special, and a high degree of scholarship upon the part of the teacher of each of these subjects is, upon the whole, equally important; but under the present system of general certification the children who pursue the various high school branches are not always assured of having a teacher who is master of his subject. The only subjects safeguarded under our present system of certification are the new, so-called special, subjects, and they are not safeguarded from the holder of the general high school certificate, who is in a favored position so far as employment is concerned.

Our present certification law does not square with itself. It divides the teachers into two groups. The persons composing one group are authorized to teach all things, whether they know them or not, and the persons of the other group are not permitted to teach all of those subjects which they do know.

This law will square with itself when the special teacher, like the regular teacher, is permitted to teach any of the high school subjects, whether he knows them or not; or, better, when both the regular and special teachers are permitted to teach only the subjects which they know.

PART V.

STATISTICAL TABLES.

KINDERGARTEN SCHOOLS.

TABLE NO. 1. Number of Counties Maintaining, Teachers, Pupils Enrolled, Average Daily Attendance, and Average Number of Days Schools Were Open.

TABLE NO. 2. Average Salary Paid Teachers 1915, Average Salary Paid Supervisors of Schools, Principals and Teachers.

TABLE NO. 3. Receipts, Expenditures, and Valuation of Property.

KINDERGARTEN SCHOOLS.

TABLE No. 1.

Statistics of Kindergarten Schools, Showing Number of Teachers, Enrollment, Average Attendance, and Average Number of Days School was Maintained, by Counties.

Counties	Total number teachers, all women		Total enrollment				Average daily attendance		Average number of days school was maintained	
			1915		1916					
	1915	1916	Boys	Girls	Boys	Girls	1915	1916	1915	1916
Alameda	44	56	1,434	1,382	1,781	1,768	1,157	1,724	189	187
Contra Costa	2	4	57	53	121	139	63	113	*97	190
El Dorado	1	1	12	25	14	17	26	24	165	180
Fresno	3	3	70	100	86	98	96	99	188	171
Humboldt	1	1	18	21	12	21	20	25	178	215
Imperial	4	3	65	70	92	88	95	88	167	165
Kern	-----	10	-------	-------	277	258	--------	261	-----	161
Lassen	-----	1	-------	-------	9	17	--------	19	-----	149
Los Angeles	304	350	4,458	4,475	4,980	5,165	5,212	5,904	174	169
Orange	7	10	184	219	252	255	217	269	169	166
Riverside	8	14	123	128	196	194	152	231	170	180
Sacramento	27	32	491	461	535	550	414	491	178	183
San Bernardino	7	13	113	120	265	243	156	320	175	175
San Diego	10	13	459	464	507	539	403	456	195	191
San Francisco	7	11	271	304	456	441	270	430	205	189
San Luis Obispo	-----	1	-------	-------	15	18	--------	27	-----	185
San Mateo	3	4	97	78	148	111	99	135	200	188
Santa Barbara	8	8	174	133	195	145	151	153	200	189
Santa Clara	1	5	19	31	156	167	26	163	194	185
Santa Cruz	1	1	30	25	42	22	23	25	188	185
Siskiyou	-----	1	-------	-------	10	18	--------	16	-----	138
Solano	-----	1	-------	-------	32	22	--------	43	-----	*70
Tulare	1	1	20	21	16	23	24	21	180	171
Ventura	2	3	64	60	84	77	64	95	200	160
Yolo	1	1	14	26	19	25	23	22	190	180
Totals	442	543	8,173	8,196	10,300	10,421	8,691	11,154	†180	†173

*First year of school.
†Average.

TABLE No. 2.

Statistics of Kindergarten Schools, Showing Average Annual Salary Paid Teachers. All Women.

Counties	Average salary paid teachers, 1915	Average annual salary paid, 1916					
		No.	Supervisors	No.	Principals	No.	Teachers
Alameda	$1,044 87	-----	-----	15	$882 34	41	$1,000 36
Contra Costa	1,080 00	-----	-----	-----	-----	4	1,050 00
El Dorado	637 50	-----	-----	-----	-----	1	720 00
Fresno	674 16	-----	-----	1	850 00	2	738 12
Humboldt	700 00	-----	-----	-----	-----	1	800 00
Imperial	883 33	-----	-----	-----	-----	3	900 00
Kern	-----	-----	-----	1	1,000 00	9	758 06
Lassen	-----	-----	-----	-----	-----	1	675 00
Los Angeles	817 21	-----	-----	171	938 39	179	715 53
Orange	603 40	-----	-----	-----	-----	10	882 27
Riverside	615 00	-----	-----	7	754 00	7	452 00
Sacramento	718 74	1	700 00	-----	-----	31	589 94
San Bernardino	815 00	-----	-----	-----	-----	13	594 71
San Diego	1,264 00	-----	-----	-----	-----	13	1,155 46
San Francisco	874 00	-----	-----	-----	-----	11	882 30
San Luis Obispo	-----	-----	-----	-----	-----	1	550 00
San Mateo	900 00	-----	-----	-----	-----	4	900 00
Santa Barbara	756 25	1	1,000 00	-----	-----	7	721 42
Santa Clara	800 00	-----	-----	2	793 90	3	673 33
Santa Cruz	800 00	-----	-----	-----	-----	1	800 00
Siskiyou	-----	-----	-----	-----	-----	1	525 00
Solano	-----	-----	-----	-----	-----	1	840 00
Tulare	900 00	-----	-----	-----	-----	1	900 00
Ventura	812 50	-----	-----	-----	-----	3	710 83
Yolo	665 00	-----	-----	-----	-----	1	665 00
Totals	*$818 01	2	*$850 00	192	*$660 87	349	*$588 77

*Average.

NOTE.—Plan of giving salary of teachers changed for 1916. Supervisors, principals and teachers given for this year.

TABLE No. 3.

Statistics of Kindergartens, Showing Receipts, Expenditures, Valuation of Property.

Counties	Receipts from all sources, including balance on hand		Total expenditure for all purposes		Total valuation of all property	
	1915	1916	1915	1916	1915	1916
Alameda	$40,096 60	$66,739 34	$40,141 89	$63,395 34	$4,323 00	$18,810 00
Contra Costa	3,608 26	6,152 84	2,806 91	4,878 85	-----	-----
El Dorado	1,081 40	830 85	917 51	830 85	113 00	100 00
Fresno	2,885 15	3,813 40	2,454 54	2,479 86	3,725 00	3,739 00
Humboldt	1,279 96	1,369 12	1,194 31	966 95	200 00	400 00
Imperial	5,400 70	8,559 19	3,821 68	4,636 68	136 00	401 00
Kern	-----	15,591 67	-----	13,925 97	-----	3,684 00
Lassen	-----	903 91	-----	867 63	-----	90 00
Los Angeles	309,734 62	436,764 68	258,980 36	334,720 31	-----	2,600 00
Orange	9,598 97	14,913 20	6,143 79	11,708 16	6,640 00	-----
Riverside	5,719 13	12,526 56	4,418 64	8,544 41	14,000 00	14,000 00
Sacramento	19,864 10	30,676 80	19,864 10	28,093 83	27,300 00	27,300 00
San Bernardino	10,941 52	24,108 85	5,043 59	15,398 72	-----	1,555 00
San Diego	16,828 37	26,398 13	14,245 90	16,012 83	-----	1,044 00
San Francisco	7,067 69	14,516 37	7,067 69	14,516 37	2,550 00	4,450 00
San Luis Obispo	-----	690 49	-----	724 75	-----	30 00
San Mateo	4,709 93	5,995 90	3,552 87	4,995 15	1,041 44	5,420 00
Santa Barbara	11,646 73	11,036 84	9,412 44	8,714 22	15,500 00	15,500 00
Santa Clara	1,546 90	5,452 96	1,277 35	5,142 18	4,300 00	8,440 00
Santa Cruz	2,000 00	2,173 13	1,613 77	1,359 18	-----	-----
Siskiyou	-----	846 88	-----	745 40	-----	175 00
Solano	-----	2,328 55	-----	1,975 49	-----	1,230 00
Tulare	1,800 25	2,283 69	1,418 81	2,265 12	110 00	160 00
Ventura	2,600 08	4,246 42	1,709 76	2,857 90	5,100 00	75 00
Yolo	1,213 08	1,242 31	769 70	1,084 36	70 00	285 00
Totals	$459,623 44	$700,162 08	$386,955 61	$550,840 51	$85,108 00	$109,488 00

ELEMENTARY SCHOOLS.

PRIMARY AND GRAMMAR (EIGHT GRADES).

TABLE No. 4. Number of School Districts, Number Union, Number Suspended, Number of Teachers Allowed on Attendance, Number of Teachers Employed—Men and Women for 1915 and 1916.

TABLE No. 5. Number of Boys and Girls Enrolled for 1915 and for 1916 and total; Number of Postgraduate Pupils in Elementary Schools—Boys and Girls.

TABLE No. 6. Number of Pupils Enrolled in Each Grade of the Elementary Schools—Boys and Girls—1915 and 1916, and Postgraduate Pupils Enrolled.

TABLE No. 7. Number of Graduates—Boys and Girls for 1915 and 1916; Number of Postgraduate Graduates—Boys and Girls for 1916; Average Daily Attendance—1915 and 1916—and Average Number of Days Schools Were Open.

TABLE No. 8. Amount of Money Apportioned by the State to the Several Counties—1915 and 1916. Total Receipts by the School Districts of State, County, District Money for 1915 and 1916.

TABLE No. 9. Total Expenditure, Total Valuation of School Property, and Average County Tax Rate for Schools for 1915 and 1916.

TABLE No. 10. Average Salary of Teachers—Men and Women for 1915. Average Salary of Supervising Principals—Men and Women; Principals—Men and Women; Regular Teachers—Men and Women—1916. Number of Each Given.

TABLE No. 11. Average Salary Paid Supervisors of Subjects—Men and Women; Teachers of Special Subjects—Men and Women for 1916.

TABLE No. 12. Bonded Indebtedness Outstanding. Special Tax Rate for Maintenance and for Buildings and Interest (Average Rate) paid on Bonds—1915 and 1916.

STATISTICS.

TABLE No. 4.

Number of Districts and Number of Teachers.

Counties	Number school districts at close of year 1915	Number school districts at close of year 1916			Number teachers allowed on average attendance		Total number teachers actually employed in each county			
							1915		1916	
		Regular active	Union	Sus-pended	1915	1916	Men	Women	Men	Women
Alameda	44	43	--------	1	1,014.85	1,038.71	128	994	135	1,000
Alpine	3	3	--------	--------	3	3	--------	3	--------	3
Amador	38	40	--------	3	56.17	58.82	6	55	8	55
Butte	75	77	--------	1	151	149	13	151	15	152
Calaveras	49	47	--------	3	62.62	63.59	14	49	13	49
Colusa	35	33	--------	3	48.69	51.70	10	44	13	44
Contra Costa	56	55	--------	--------	188.15	202.29	13	187	16	195
Del Norte	16	16	--------	--------	20	22	4	17	5	18
El Dorado	55	51	--------	5	58.06	57.50	10	49	6	52
Fresno	144	145	--------	1	506.03	529.01	59	467	59	482
Glenn	42	38	1	2	60.16	60.02	10	53	13	51
Humboldt	105	105	--------	3	192	197	20	173	20	184
Imperial	51	50	--------	--------	105	107	9	141	15	147
Inyo	24	23	--------	1	32	32	2	29	3	31
Kern	93	95	--------	--------	209.55	216.67	15	220	20	225
Kings	41	40	--------	--------	97.32	101.25	12	93	16	89
Lake	39	38	--------	1	46.43	46.33	7	46	6	40
Lassen	43	43	--------	--------	51	54	13	36	15	39
Los Angeles	152	156	--------	1	2,395.90	2,456.44	325	2,778	271	2,773
Madera	46	43	1	1	70.09	72.10	9	67	6	73
Marin	45	45	--------	--------	96.86	102.88	6	106	6	106
Mariposa	29	29	--------	--------	28.03	29	1	27	1	30
Mendocino	121	123	1	9	163	172	13	145	18	145
Merced	62	57	2	1	112.03	120.49	13	108	14	114
Modoc	40	41	--------	--------	52	53	11	42	12	41
Mono	11	10	2	--------	12	12	3	7	2	10
Monterey	88	82	2	4	138.89	140.32	9	132	10	134
Napa	51	48	--------	1	87.80	89.78	4	85	5	81
Nevada	45	44	--------	2	83	82	5	71	5	71
Orange	50	45	2	--------	215.60	218.56	28	238	29	243
Placer	52	51	--------	--------	86.82	93.62	11	79	13	88
Plumas	32	32	--------	2	35	36	3	31	3	31
Riverside	68	66	2	1	194.38	200.12	21	211	27	217

Sacramento	74	71	2	1	284.76	297.82	17	331	24	364
San Benito	34	34	1	4	47.24	48.63	4	39	4	43
San Bernardino	75	74	1	--------	290.12	308.15	21	323	29	349
San Diego	113	117	--------	6	382.50	378.73	28	391	36	408
San Francisco	1	1	--------	--------	1,293	1,319	53	1,165	62	1,241
San Joaquin	87	85	1	--------	249.46	265.26	32	228	33	242
San Luis Obispo	93	92	--------	2	131	134	14	131	15	131
San Mateo	36	34	--------	3	134	142	12	123	11	137
Santa Barbara	65	62	1	--------	125.09	132.20	19	124	18	141
Santa Clara	83	78	--------	1	345.68	355.19	22	363	27	361
Santa Cruz	52	50	1	2	119.19	121.86	7	134	9	138
Shasta	102	104	--------	4	125	128	9	115	11	115
Sierra	17	16	--------	2	20	20	3	18	3	18
Siskiyou	90	84	4	2	129	132	18	103	21	106
Solano	52	50	--------	--------	114.78	117.92	7	116	8	114
Sonoma	150	143	--------	5	270.14	275.12	28	252	25	261
Stanislaus	62	57	--------	2	183.89	184.75	17	187	20	187
Sutter	34	34	--------	--------	48	49	8	44	7	47
Tehama	66	65	--------	2	96.15	95.28	16	88	15	90
Trinity	25	24	--------	1	26	27	1	25	2	24
Tulare	126	123	--------	1	263.72	272.79	30	248	29	262
Tuolumne	33	32	--------	--------	55	54	7	46	7	47
Ventura	55	52	--------	--------	110.86	117.13	9	115	6	118
Yolo	43	42	3	3	71.99	73.97	6	75	9	72
Yuba	39	39	--------	--------	56	57	7	49	7	51
Totals	3,452	3,377	27	87	11,646	11,975	1,202	11,767	1,238	12,080

TABLE No. 5.

Total Enrollment of Pupils by Sex and by County, Including Elementary and Postgraduate Elementary Schools.

Counties	Elementary schools						Postgraduate elementary schools, 1916*		
	Boys		Girls		Total				
	1915	1916	1915	1916	1915	1916	Boys	Girls	Total
Alameda	21,994	21,758	19,321	19,497	41,315	41,255	-----	-----	-----
Alpine	23	23	13	8	36	31	-----	-----	-----
Amador	767	797	695	740	1,462	1,537	2	5	7
Butte	2,349	2,306	2.130	2.033	4,479	4,339	18	15	33
Calaveras	740	785	755	729	1,495	1,514	-----	-----	-----
Colusa	624	650	563	591	1,187	1,241	4	1	5
Contra Costa	3,369	3,555	3,297	3,473	6,666	7,028	-----	1	1
Del Norte	260	299	265	261	525	560	-----	8	8
El Dorado	547	521	565	529	1,112	1,050	5	12	17
Fresno	9,400	9,529	8,577	8,815	17,977	18,344	-----	4	4
Glenn	814	790	816	799	1,630	1,589	10	5	15
Humboldt	3,080	2,999	2,704	2,751	5,784	5,750	4	6	10
Imperial	2,260	2,220	1,893	2,043	4,153	4,263	8	4	12
Inyo	431	458	406	414	837	872	-----	-----	-----
Kern	3,359	3,519	3,120	3,241	6,479	6,760	-----	2	2
Kings	1,798	1,896	1,639	1,738	3,437	3,634	-----	-----	-----
Lake	487	468	478	492	965	960	3	1	4
Lassen	609	654	573	604	1,182	1,258	5	8	13
Los Angeles	51,440	52,481	47,280	48,328	98,720	100,809	-----	6	6
Madera	913	998	840	906	1,753	1,904	-----	-----	-----
Marin	1,868	1,875	1,681	1,711	3,549	3,586	-----	-----	-----
Mariposa	290	306	250	232	540	538	-----	-----	-----
Mendocino	2,059	2,150	1,886	1,938	3,945	4,088	18	11	29
Merced	1,854	1,906	1,657	1,767	3,511	3,673	-----	-----	-----
Modoc	641	630	622	614	1,263	1,244	5	11	16
Mono	88	75	75	83	163	158	4	4	8
Monterey	1,875	2,017	1,724	1,788	3,599	3,805	2	9	11
Napa	1,303	1,300	1,243	1,258	2,546	2,558	-----	-----	-----
Nevada	1,095	1,089	1,055	1,048	2,150	2,137	-----	-----	-----
Orange	4,259	4,282	4,059	4,100	8,318	8,382	-----	-----	-----
Placer	1,526	1,529	1,297	1,364	2,823	2,893	9	9	18
Plumas	393	404	369	359	762	763	-----	-----	-----
Riverside	3,351	3,486	3,065	3,219	6,416	6,705	-----	-----	-----
Sacramento	5,634	6,044	4,903	5,100	10,537	11,144	13	12	25
San Benito	575	596	571	600	1,146	1,196	-----	-----	-----
San Bernardino	5,298	5,634	4,787	5,059	10,085	10,693	-----	-----	-----
San Diego	6,803	6,737	6.510	6,356	13,313	13,093	11	9	20
San Francisco	29,139	28,910	26,101	25,687	55,240	54,597	-----	-----	-----
San Joaquin	4,519	4,746	4,270	4,925	8,789	9,671	-----	-----	-----
San Luis Obispo	1,703	1,806	1,550	1,668	3,253	3,474	28	30	58
San Mateo	2,487	2,729	2,297	2,438	4,784	5,167	1	3	4
Santa Barbara	2.222	2,330	2,089	2,079	4,311	4,409	-----	-----	-----
Santa Clara	7,008	7,263	6,288	6,348	13,296	13,611	-----	-----	-----
Santa Cruz	2,015	2,049	1,784	1,799	3,799	3,848	-----	-----	-----
Shasta	1,453	1,489	1,454	1,403	2,907	2,892	-----	-----	-----
Sierra	239	235	237	209	476	444	-----	-----	-----
Siskiyou	1,545	1,613	1,471	1,555	3,016	3,168	-----	-----	-----
Solano	1,927	1,965	1,755	1,803	3,682	3,768	-----	-----	-----
Sonoma	4,681	4,739	4,101	4.171	8,782	8,910	-----	-----	-----
Stanislaus	3,256	3,288	3,015	3,120	6,271	6,408	5	5	10
Sutter	693	681	645	640	1,338	1,321	-----	-----	-----
Tehama	1,252	1,230	1.084	1,113	2,336	2,343	-----	-----	-----
Trinity	261	261	221	231	482	492	-----	-----	-----
Tulare	4,408	4,433	4,057	4,106	8,465	8,539	21	25	46
Tuolumne	790	771	730	719	1,520	1,490	-----	-----	-----
Ventura	1,917	2,116	1,768	1,864	3,685	3,980	-----	4	4
Yolo	1,119	1,192	1,017	1,050	2,136	2,242	-----	5	5
Yuba	714	776	650	658	1,364	1,434	7	13	20
Totals	217,524	221,388	198,268	202,174	415,792	423,562	183	228	411

*No data for 1915. Law passed session of 1915.

TABLE No. 6.

Showing Enrollment of Pupils by Grades for the State in the Elementary and in the Postgraduate Elementary Schools.

Elementary schools	1915	1916
Enrolled in first year—		
Boys	46,463	46,269
Girls	40,397	40,548
Enrolled in second year—		
Boys	29,203	29,766
Girls	25,942	26,749
Enrolled in third year—		
Boys	27,657	28,533
Girls	25,389	26,537
Enrolled in fourth year—		
Boys	26,622	27,346
Girls	25,091	24,879
Enrolled in fifth year—		
Boys	24,932	25,638
Girls	22,956	22,992
Enrolled in sixth year—		
Boys	22,193	23,453
Girls	20,526	21,552
Enrolled in seventh year—		
Boys	20,769	20,845
Girls	19,244	19,493
Enrolled in eighth year—		
Boys	19,685	19,538
Girls	18,723	19,424
Totals—		
Boys	217,524	221,388
Girls	198,268	202,174
Grand totals	415,792	423,562
Postgraduate Elementary Schools.		
Enrolled in first year—		
Boys	----------	174
Girls	----------	213
Enrolled in second year—		
Boys	----------	9
Girls	----------	15
Totals—		
Boys	----------	183
Girls	----------	328
Grand total postgraduate pupils	----------	411

NOTE.—The provision for postgraduate grammar school pupils was not completely effective till August, 1915, hence no report previous to 1916 is given. Twenty-seven counties have postgraduate grammar schools. There are 151 schools following this course in all the counties.

TABLE No. 7.

Showing Number of Graduates from Elementary and from Postgraduate Elementary Schools, Average Daily Attendance in Schools and Average Number of Days School Was Open, by Counties.

Counties	Number graduates from—						Average daily attendance		Average number of days school was open	
	Elementary schools				Postgraduate elementary schools					
	1915		1916		1916					
	Boys	Girls	Boys	Girls	Boys	Girls	1915	1916	1915	1916
Alameda	1,125	1,198	1,335	1,389	-----	-----	32,215	33,016	187	185
Alpine	-------	2	-------	-------	-----	-----	24	25	156	151
Amador	41	43	42	42	-----	-----	1,242	1,320	168	166
Butte	180	192	119	149	-----	-----	3,745	3,698	154	165
Calaveras	58	56	20	35	-----	-----	1,269	1,268	173	167
Colusa	50	34	45	47	-----	-----	999	1,100	160	158
Contra Costa	170	198	134	150	-----	-----	5,753	6,166	175	184
Del Norte	11	12	9	15	-----	-----	423	457	180*	172
El Dorado	21	41	24	36	-----	-----	906	888	156	158
Fresno	506	440	468	558	-----	-----	15,378	15,840	172	161
Glenn	64	53	53	58	3	4	1,374	1,353	176	164
Humboldt	193	184	203	215	-----	-----	4,727	4,883	180	170
Imperial	102	95	95	83	-----	-----	3,139	3,172	163	163
Inyo	24	23	31	49	-----	-----	686	745	166	165
Kern	175	170	176	207	-----	-----	5,410	5,604	169*	157
Kings	70	85	76	101	-----	-----	2,847	3,037	163	168
Lake	30	20	40	43	-----	-----	794	791	155	153
Lassen	18	19	24	33	-----	-----	896	971	160	150
Los Angeles	4,044	4,018	3,827	3,691	-----	2	75,903	77,833	180	167
Madera	34	43	69	55	-----	-----	1,506	1,644	176	168
Marin	138	116	128	125	-----	-----	2,788	2,907	182	182
Mariposa	9	19	11	10	-----	-----	385	405	153	146
Mendocino	100	171	98	176	-----	-----	3,241	3,447	165*	160
Merced	125	121	97	107	-----	-----	2,980	3,096	170	155
Modoc	30	40	28	39	1	5	962	978	150	152
Mono	5	3	1	5	-----	-----	112	128	169	152
Monterey	114	138	133	151	-----	-----	2,979	3,153	183	173
Napa	90	106	103	115	-----	-----	2,177	2,167	175	178
Nevada	77	89	70	73	-----	-----	1,837	1,836	159	160
Orange	258	242	217	260	-----	-----	6,955	7,062	167	167
Placer	95	89	83	82	6	1	2,339	2,442	151	160
Plumas	20	22	7	18	-----	-----	599	601	142	144
Riverside	214	211	200	268	-----	-----	5,437	5,519	174*	174
Sacramento	412	379	425	407	-----	-----	8,384	8,735	170	169
San Benito	37	43	34	59	-----	-----	953	996	177	166
San Bernardino	330	310	306	336	-----	-----	8,370	8,810	176	172
San Diego	434	444	447	466	-----	-----	10,540	10,244	173	173
San Francisco	1,526	1,748	1,621	1,578	-----	-----	41,117	41,916	205	188
San Joaquin	213	260	220	246	-----	-----	7,065	7,697	170	171
San Luis Obispo	123	112	110	133	-----	-----	2,726	2,897	168	163
San Mateo	129	132	129	140	-----	-----	4,054	4,324	198	186
Santa Barbara	132	188	133	124	-----	-----	3,273	3,501	193	186
Santa Clara	442	475	467	409	-----	-----	10,693	11,174	187	175
Santa Cruz	122	156	158	149	-----	-----	3,178	3,274	178	180
Shasta	71	67	68	86	-----	-----	2,272	2,299	152	150
Sierra	9	5	15	15	-----	-----	395	352	167	154
Siskiyou	39	59	51	58	-----	-----	2,530	2,554	161	155
Solano	128	141	124	136	-----	-----	3,102	3,165	186	182
Sonoma	287	299	244	285	-----	-----	6,969	7,230	180	170
Stanislaus	169	205	173	186	-----	-----	5,459	5,649	169	170
Sutter	51	46	67	54	-----	-----	1,126	1,146	174	178
Tehama	62	65	93	124	-----	-----	1,913	1,934	152	155
Trinity	18	14	11	10	-----	-----	349	365	147	150
Tulare	304	298	276	338	-----	2	7,231	7,494	177	163
Tuolumne	40	38	45	63	-----	-----	1,322	1,309	161	164
Ventura	114	132	111	125	-----	-----	2,969	3,146	180	174
Yolo	57	78	100	97	-----	-----	1,813	1,958	179	171
Yuba	40	42	46	60	2	-----	1,170	1,222	154	157
Totals	13,480	14,029	13,440	14,069	12	14	331,000	340,943	†172.8	†166

†Average.

*It will be seen that the schools averaged 172.8 days in 1915 and 166 days in 1916. This is due partly to a more strict counting of time and to a falling off of funds as a result of repeal of poll tax.

TABLE No. 8.

Showing State Funds Apportioned to Counties and Total Receipts by Districts from All Sources for School Purposes, Including State Apportionment.

Counties	State funds apportioned		Total receipts	
	1915	1916	1915	1916
Alameda	$510,682 90	$527,410 52	$2,604,541 79	$2,826,340 88
Alpine	1,040 11	963 28	3,907 68	3,559 07
Amador	25,345 83	24,686 85	67,186 83	68,881 89
Butte	76,395 91	70,042 45	287,485 39	226,465 90
Calaveras	27,648 76	26,525 15	65,946 29	73,354 08
Colusa	20,505 51	20,669 51	67,617 73	71,027 50
Contra Costa	91,698 34	95,844 88	531,706 58	471,632 10
Del Norte	8,820 42	8,620 69	25,458 87	28,480 91
El Dorado	22,830 40	22,278 47	49,397 19	48,541 37
Fresno	248,370 66	257,154 13	1,180,598 70	1,044,017 95
Glenn	25,955 84	26,703 87	116,895 61	97,405 27
Humboldt	88,813 45	88,356 26	305,130 83	319,768 83
Imperial	45,637 09	52,312 24	347,069 95	430,309 29
Inyo	13,111 93	13,829 95	53,661 19	41,043 66
Kern	95,339 88	98,302 63	461,815 39	485,165 33
Kings	48,336 36	48,540 55	160,091 33	157,011 01
Lake	18,391 78	18,384 08	36,804 17	37,863 82
Lassen	17,688 52	20,257 28	64,223 19	62,293 16
Los Angeles	1,238,509 00	1,246,059 98	8,406,665 59	7,903,919 74
Madera	27,491 78	30,225 08	101,719 71	124,103 05
Marin	48,399 76	47,979 68	201,133 57	168,177 64
Mariposa	10,616 43	10,303 29	25,022 80	25,008 85
Mendocino	69,251 98	68,408 03	185,416 27	191,278 29
Merced	51,249 58	53,260 26	189,239 57	175,358 98
Modoc	21,833 01	21,217 02	65,089 67	64,752 15
Mono	3,512 82	3,959 62	15,244 06	14,524 27
Monterey	59,160 74	60,066 70	150,408 17	176,057 81
Napa	41,070 40	40,521 94	110,594 56	118,222 89
Nevada	36,924 57	36,431 10	82,509 15	83,081 20
Orange	108,032 94	112,893 58	569,597 46	476,624 38
Placer	41,013 06	41,594 37	158,503 20	163,859 26
Plumas	13,949 38	13,879 53	48,873 67	48,607 57
Riverside	90,487 98	94,713 71	465,169 35	393,567 48
Sacramento	141,581 99	142,620 70	882,364 90	989,709 84
San Benito	19,897 81	19,926 84	66,313 55	58,488 45
San Bernardino	138,522 14	143,614 76	665,574 04	647,552 03
San Diego	188,268 18	185,649 08	1,019,819 20	760,062 88
San Francisco	660,540 74	672,909 63	2,261,851 63	2,550,064 62
San Joaquin	117,773 36	122,409 17	820,391 22	625,860 74
San Luis Obispo	55,797 39	55,994 68	177,474 52	227,108 14
San Mateo	67,773 72	68,004 14	275,311 41	339,194 48
Santa Barbara	59,677 80	59,243 52	227,645 27	221,232 70
Santa Clara	184,373 00	178,016 85	562,583 50	633,713 60
Santa Cruz	57,760 50	56,905 77	292,270 79	222,458 68
Shasta	52,888 56	50,678 63	127,384 97	126,047 66
Sierra	8,936 64	8,387 35	23,622 31	21,861 07
Siskiyou	51,248 96	53,664 35	138,432 45	145,891 58
Solano	54,503 41	55,059 54	185,829 64	232,784 51
Sonoma	130,403 82	127,199 74	383,184 42	379,446 07
Stanislaus	90,717 42	92,414 65	316,303 43	374,376 49
Sutter	21,798 84	21,631 34	74,771 66	88,708 55
Tehama	40,831 77	40,415 87	140,586 14	134,384 04
Trinity	9,608 57	9,481 93	23,687 80	25,099 36
Tulare	123,915 23	127,412 66	584,980 85	540,750 17
Tuolumne	25,086 09	25,033 91	66,273 80	57,361 10
Ventura	50,897 61	52,922 19	187,084 68	255,869 31
Yolo	33,477 31	33,466 33	222,433 28	216,275 16
Yuba	23,147 76	23,950 98	60,408 59	63,288 37
Totals	$5,657,545 74	$5,729,411 29	*$26,991,309 58	*$26,557,895 18

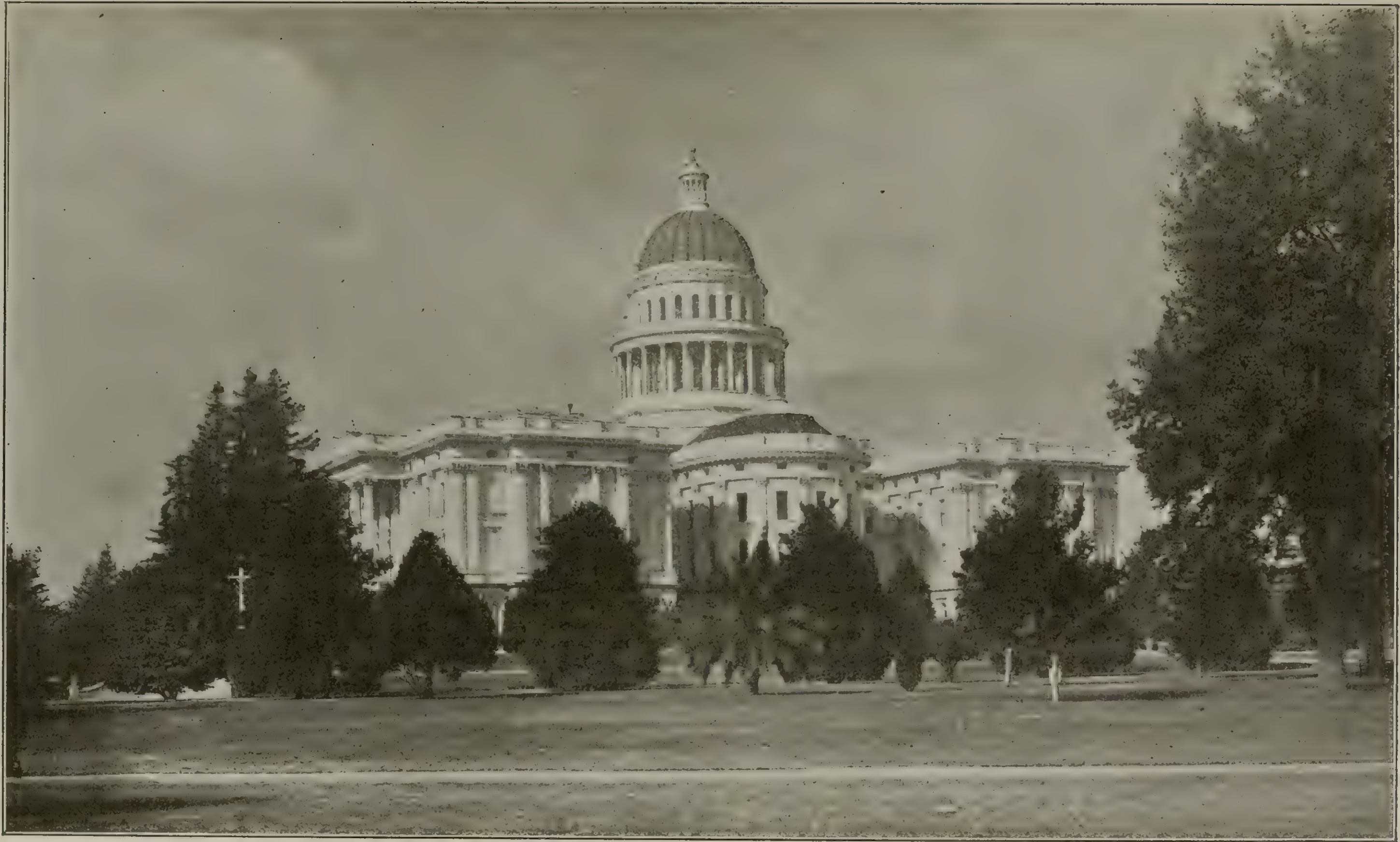
*Includes state and county apportionments and special and building funds.

TABLE No. 9.

Showing Total Expenditures for Elementary Schools, Total Valuation of Property and County Tax Rate for Such Schools.

Counties	Expenditure for all purposes		Total valuation of property		County tax rate for schools	
	1915	1916	1915	1916	1915	1916
Alameda	$2,298,606 79	$2,580,742 35	$6,483,108	$6,431,188	$0.28	$0.27
Alpine	2,230 43	2,540 62	3,260	3,095	.15	.08
Amador	50,228 12	54,031 47	92.313	94,515	.30	.36
Butte	249,015 59	200,384 96	331,619	361,891	.28	.40
Calaveras	52,167 72	52,612 40	61,558	67,340	.35	.44
Colusa	53,114 76	53,918 64	115,110	119,675	.201	.17
Contra Costa	377,421 08	387,645 56	877,507	848,322	.268	.31
Del Norte	19,903 21	21,199 23	23,995	24,495	.22	.25
El Dorado	41,451 56	37,972 27	65,965	74,119	.22	.28
Fresno	874,143 68	826,268 15	1,756,590	1,807,128	.25	.32
Glenn	93,205 01	75,084 76	182,700	190,320	.21	.23
Humboldt	212,221 54	232,608 33	397,585	400,340	.285	.3625
Imperial	232,710 38	387,830 94	328,075	558,091	.35	.31
Inyo	48,320 64	33,788 64	98,100	99,650	.15	.15
Kern	360,734 99	389,080 93	944,961	990,201	.145	.155
Kings	140,698 87	131,117 26	307,427	305,860	.40	.45
Lake	33,122 43	33,846 43	52,533	53,046	.25	.26
Lassen	50,406 37	51,571 14	60,740	64,055	.25	.32
Los Angeles	6,354,736 96	6,139,448 28	15,369,452	17,703,136	.21	.17
Madera	85,398 86	107,477 49	195,118	212,705	.35	.35
Marin	176,396 19	144,450 57	337,210	346,200	.23	.24
Mariposa	21,365 90	21,286 28	30,237	29,882	.295	.33
Mendocino	122,321 57	138,659 91	223,372	231,650	.31	.32
Merced	155,634 10	145,701 59	313,370	328,658	.24	.25
Modoc	47,817 05	46,168 56	87,896	95,245	.30	.30
Mono	10,145 58	10,772 92	15,870	14,160	.40	.40
Monterey	141,843 72	144,900 58	308.394	303.419	.28	.29
Napa	91,110 76	95,318 02	207,687	200,220	.22	.25
Nevada	73,588 88	73,016 83	179,229	177,749	.50	.50
Orange	482,595 56	393,356 98	1,385,599	362,985	.27	.25
Placer	100,331 50	127,629 33	169,871	193,195	.33	.33
Plumas	35,291 57	30.114 54	70,408	71,218	.20	.25
Riverside	376,447 79	306,120 39	785,295	849,280	.323	.32
Sacramento	701,746 95	768,492 90	1,631,940	1,798,117	.20	.20
San Benito	50,748 27	45,556 76	92,118	79,410	.25	.25
San Bernardino	485,894 51	513,861 59	1,174,963	1,277,765	.27	.32
San Diego	850,817 41	670,349 76	1,776,989	1,820,066	.233	.224
San Francisco	2,255,896 50	2,314,879 87	10,714,635	10,880,707	.222	.222
San Joaquin	617,151 28	548,260 04	1,289,880	1,298,795	.18	.20
San Luis Obispo	135,235 30	180.163 88	258,148	303,575	.30	.25
San Mateo	247,872 32	251.240 49	578,300	590,800	.31	.30
Santa Barbara	187,633 43	186,785 88	472,155	475,685	.26	.30
Santa Clara	504,613 93	471,012 21	1,230,926	1,293,582	.25	.25
Santa Cruz	232,518 15	195,500 64	443,029	360,763	.34	.38
Shasta	103,129 41	104,077 35	261,075	266,830	.35	.37
Sierra	18,861 99	16,808 26	37,992	39,102	.311	.31
Siskiyou	104,802 06	124,162 17	170.799	178,038	.25	.25
Solano	143,476 39	179,434 32	253,755	299,040	.26	.26
Sonoma	299,729 21	305,162 16	656,125	656,125	.29	.274
Stanislaus	256,560 38	244,165 76	664,985	636,845	.30	.30
Sutter	57,843 63	60,318 64	85,700	86,895	.22	.221
Tehama	110,278 23	95,631 88	192,176	190,735	.33	.35
Trinity	19,160 30	17,763 87	26,185	26,121	.27	.32
Tulare	459,360 40	437.835 02	1,000,875	1,022,400	.31	.36
Tuolumne	52,663 53	46,837 82	101,380	101,180	.25	.25
Ventura	141,967 01	166,733 53	269,880	335,096	.17	.20
Yolo	105,534 53	186,031 01	186,951	279,415	.178	.23
Yuba	52,914 46	54,343 07	133,352	115,605	.30	.30
Totals	$21,661,138 74	$21,662,075 23	$55,566,467	$58,023,726	*$0.273	*$0.286

*Average.



THE CAPITOL (east side)

TABLE No. 10.

Showing Average Annual Salary Paid Supervising Principals, Principals and Teachers.

Counties	Average annual salary paid teachers, 1915		*Supervising principal, 1916				†Principal, 1916				Regular teachers, 1916			
	Men	Women	No.	Men	No.	Women	No.	Men	No.	Women	No.	Men	No.	Women
Alameda	$1,704 24	$1,165 32	43	$2,246 37	12	$1,860 00	18	$1,357 22	16	$1,345 00	40	$990 11	924	$1,131 65
Alpine		613 33											3	604 58
Amador	952 91	667 84					6	955 83	1	600 00	2	442 50	52	652 70
Butte	1,098 67	556 76	2	2,075 00			6	1,005 00	16	873 43	7	862 14	132	713 70
Calaveras	708 92	637 70									13	729 99	49	656 76
Colusa	949 35	685 03					8	1,077 65			5	656 00	42	706 80
Contra Costa	1,426 92	850 04	3	1,860 00	1	1,500 00	7	1,422 85	7	1,370 71	3	966 66	182	896 86
Del Norte	646 00	694 00							1	1,150 00	5	714 50	17	633 45
El Dorado	633 90	564 82					1	900 00	1	680 00	5	657 50	51	562 66
Fresno	1,173 55	822 72	6	1,875 00	2	1,293 75	33	1,142 08	52	762 81	13	1,058 07	426	821 52
Glenn	913 00	691 18					6	1,042 50	2	675 00	7	742 14	48	696 62
Humboldt	924 75	770 56	5	1,675 00			10	1,096 00	20	944 63	7	705 64	157	747 35
Imperial	1,489 93	857 98					4	1,060 00	21	842 25	4	812 85	118	744 04
Inyo	1,125 00	720 05					1	1,200 00			3	766 00	30	707 00
Kern	1,240 60	824 08	4	1,880 00	3	1,350 00	4	1,245 00	27	989 72	10	695 00	190	788 51
Kings	1,060 83	770 99	2	2,000 00			7	910 00	8	865 62	6	838 00	76	750 67
Lake	732 50	473 33					3	895 00	2	640 00	3	520 00	37	577 21
Lassen	777 11	650 32	1	1,125 00			1	1,125 00			13	772 62	39	639 92
Los Angeles	1,478 98	1,100 31	53	2,101 98	55	1,939 09	79	1,406 37	132	1,167 58	59	1,059 76	2,224	1,002 00
Madera	922 94	670 12	1	1,800 00			2	1,080 00	8	840 42	1	810 00	64	737 32
Marin	2,217 33	888 21	3	2,012 00			3	1,433 33	17	1,155 26			89	840 90
Mariposa	510 00	619 49							2	659 62	1	637 50	28	584 50
Mendocino	751 42	623 81	2	1,350 00			6	915 00	3	780 00	10	591 25	142	616 41
Merced	973 38	730 00	2	1,800 00			10	854 75	13	800 38	2	725 00	101	733 72
Modoc	712 11	517 65					4	958 75	2	877 50	8	654 28	39	650 61
Mono	888 33	725 71									2	1,075 00	10	680 70
Monterey	1,040 00	764 00					6	1,288 00	11	955 23	4	688 75	122	727 43
Napa	1,458 00	730 00	1	1,800 00							4	1,220 50	81	707 73
Nevada	1,380 20	733 14					1	850 00	1	1,092 50	3	1,033 00	71	736 00
Orange	1,101 16	745 52	1	1,800 00			18	1,265 55	33	934 50	4	1,097 50	197	759 82
Placer	1,128 77	621 75	1	1,350 00			6	1,142 50	4	795 00	4	896 25	82	705 17
Plumas	626 66	656 73							3	738 00	3	590 00	28	685 00
Riverside	994 00	771 00	2	2,475 00	1	1,380 00	13	1,161 00	22	869 00	6	645 00	186	743 00
Sacramento	1,092 35	1,037 37	3	1,447 33	13	1,667 85	5	1,020 75	18	947 64	7	565 71	318	1,037 40
San Benito	996 25	670 00					2	1,390 00	2	698 50	2	705 00	39	660 00
San Bernardino	1,461 00	811 43	4	1,700 02	3	1,110 00	13	1,185 00	40	988 00	3	693 00	286	789 00

San Diego	1,136 62	866 89	10	1,798 80	1	2,004 00	10	1,264 60	28	946 29	7	659 43	360	574 45
San Francisco	1,309 00	1,140 00	11	1,925 00	63	2,078 41	----	----	14	1,486 36	24	939 20	1,119	1,052 13
San Joaquin	1,207 24	859 70	1	1,750 00	----	----	21	1,246 00	21	872 00	5	751 00	212	883 00
San Luis Obispo	911 07	700 85	----	----	----	----	8	1,193 75	6	776 66	6	764 58	124	570 10
San Mateo	1,565 00	949 51	5	2,232 00	----	----	3	1,260 00	13	1,112 96	2	1,050 00	118	905 01
Santa Barbara	1,064 74	855 60	----	----	----	----	6	1,541 66	5	976 50	5	1,056 00	121	796 90
Santa Clara	1,497 99	843 39	9	1,734 00	2	1,800 00	9	1,210 00	34	862 94	5	727 09	321	854 41
Santa Cruz	1,390 07	754 77	1	2,500 00	----	----	4	1,200 00	11	945 00	1	850 00	119	750 75
Shasta	700 00	615 38	----	----	----	----	2	1,237 50	4	912 50	9	612 22	111	627 55
Sierra	993 75	685 29	----	----	----	----	2	800 00	1	900 00	2	986 00	16	529 00
Siskiyou	796 14	645 35	----	----	----	----	10	941 00	4	953 00	10	607 00	102	623 00
Solano	1,360 00	859 60	----	----	----	----	6	1,460 00	9	1,051 48	2	930 00	105	887 15
Sonoma	929 41	777 96	4	1,594 85	----	----	12	920 00	24	916 01	7	914 71	234	739 99
Stanislaus	1,121 95	737 29	2	1,200 00	----	----	9	1,157 77	22	856 25	7	942 14	152	761 08
Sutter	887 46	713 90	----	----	----	----	6	931 66	3	720 00	1	900 00	44	713 69
Tehama	729 13	665 22	1	1,500 00	----	----	5	900 00	7	727 00	8	684 72	81	649 14
Trinity	810 00	604 68	----	----	----	----	1	925 00	----	----	1	600 00	24	607 00
Tulare	1,066 20	785 80	3	2,171 66	1	1,600 00	16	1,110 94	25	895 80	6	894 16	231	770 03
Tuolumne	680 96	692 20	----	----	----	----	4	954 68	3	1,107 00	3	810 75	44	696 50
Ventura	1,357 78	751 83	----	----	----	----	5	1,540 00	10	857 75	----	----	105	740 92
Yolo	1,272 33	758 39	1	1,800 00	----	----	5	1,013 00	8	936 91	3	660 00	62	761 22
Yuba	860 00	684 33	1	1,800 00	----	----	2	900 00	----	----	4	672 50	50	699 00
Totals	‡$1,050 65	‡$746 21	190	‡$1,982 50	157	‡$1,921 43	429	‡$1,223 99	737	‡$970 05	387	‡$841 93	10,535	‡$668 95

*Supervising principal is a principal who gives all his time to supervision.
†A principal is one who teaches part or all the time, but has charge of one or more schools.
‡Average.

TABLE No. 11.

Showing Average Annual Salary Paid Special Teachers, 1916.

Counties	Supervisors of subjects (special)				Teachers of subjects (special)			
	No.	Men	No.	Women	No.	Men	No.	Women
Alameda	13	$1,446 15	26	$1,202 11	22	$1,303 63	21	$1,346 91
Alpine								
Amador							2	641 25
Butte	1	1,100 00	3	900 00				
Calaveras								
Colusa							2	332 50
Contra Costa			2	362 50	2	780 00	4	877 50
Del Norte								
El Dorado								
Fresno	4	791 66	2	1,660 00			3	953 46
Glenn							1	765 00
Humboldt			1	1,200 00	2	750 00	7	821 43
Imperial			1	618 87	2	1,100 00	7	1,129 43
Inyo								
Kern	2	1,880 00	5	1,296 00				
Kings	1	1,214 40	1	1,305 00			4	716 25
Lake							1	315 00
Lassen								
Los Angeles	25	1,055 25	58	1,615 03	55	1,032 38	304	985 89
Madera					2	975 00	1	900 00
Marin								
Mariposa								
Mendocino								
Merced								
Modoc								
Mono								
Monterey			1	1,250 00				
Napa								
Nevada								
Orange					5	793 00	14	697 30
Placer					2	270 00	2	562 00
Plumas								
Riverside					6	1,123 00	8	1,140 00
Sacramento	2	1,800 00	4	1,755 00	7	1,155 08	11	186 86
San Benito							2	920 00
San Bernardino					8	1,030 00	21	804 00
San Diego	8	1,289 00	11	1,281 09	1	851 36	8	799 91
San Francisco	2	2,460 00	8	1,507 50	25	1,096 80	37	762 12
San Joaquin	1	1,620 00	2	1,620 00	5	1,210 00	6	1,254 00
San Luis Obispo							1	450 00
San Mateo					1	1,450 00	6	885 00
Santa Barbara					6	716 66	15	539 20
Santa Clara	1	2,281 65	1	1,200 00	3	660 00	3	730 00
Santa Cruz			4	950 00	3	943 00	4	1,025 00
Shasta								
Sierra								
Siskiyou					1	60 00		
Solano								
Sonoma					2	2,400 00	3	1,850 00
Stanislaus					4	381 25	11	655 45
Sutter								
Tehama			1	720 00	1	360 00	1	810 00
Trinity								
Tulare					4	1,068 75	5	917 00
Tuolumne								
Ventura							4	681 [illegible]5
Yolo							2	357 00
Yuba							1	620 00
Totals	60	†$1,537 91	131	†$1,409 60	170	†$1,040 20	522	*†$919 [illegible]7

†Average.
*Special teachers often teach but one subject, hence low salary in some instances.

TABLE No. 12.

Showing Bonded Indebtedness for Elementary Schools, Average Interest Rate on Outstanding Bonds and Rate of Special Tax for Maintenance and for Buildings.

Counties	Total bonded indebtedness		Average rate of interest on outstanding bonds		Average rate of special tax			
					Maintenance		Buildings	
	1915	1916	1915	1916	1915	1916	1915	1916
Alameda	$1,579,325	$4,041,949	$0.04	$0.05	$0.24	$0.22	$0.13	---------
Alpine	---------	---------	---------	---------	---------	---------	---------	---------
Amador	500	---------	.06	---------	.157	.14	.40	$0.70
Butte	193,840	181,680	.055	.055	.375	.226	---------	---------
Calaveras	---------	---------	---------	---------	---------	---------	---------	.01
Colusa	25,000	23,000	.055	.049	.27	.25	.13	---------
Contra Costa	489,850	514,600	.05	.05	.13	.24	.46	.16
Del Norte	---------	---------	---------	---------	.06	.131	---------	---------
El Dorado	---------	---------	---------	---------	.125	.20	.57	---------
Fresno	993,023	968,136	.055	.0586	.43	.194	.04	.236
Glenn	95,000	93,500	.055	.057	.157	.124	---------	.15
Humboldt	52,000	45,500	.048	.075	.30	.2279	.637	.6313
Imperial	308,250	419,600	.06	.06	.268	.198	.17	.26
Inyo	57,850	28,550	.06	.06	.12	.285	.10	---------
Kern	551,105	620,050	.06	.06	.22	.22	---------	.61
Kings	146,570	129,180	.06+	.061	.256	.187	.42	---------
Lake	1,250	725	.07	.07	---------	.19	.26	.35
Lassen	10,190	11,534	.066	.066	.30	.08	---------	.40
Los Angeles	7,377,087	8,454,987	.051	.05	.177	.164	.115	---------
Madera	106,425	118,725	.061	.06	.112	.083	---------	.225
Marin	125,800	111,000	.05	.053	.20	.099	---------	.015
Mariposa	5,300	---------	.066	.066	---------	---------	.35	.35
Mendocino	26,000	13,030	.05+	.06	.257	.100	.181	.177
Merced	130,050	118,875	.06	.06	.19	.18	.26	---------
Modoc	39,720	35,890	.063	.061	---------	.10	.49	.24
Mono	---------	---------	---------	---------	---------	---------	---------	---------
Monterey	32,500	33,300	.061	.06	.15	.12	---------	.06
Napa	3,200	29,300	.052	---------	.096	.47	.135	---------
Nevada	---------	---------	---------	---------	.50	.15	---------	---------
Orange	441,375	544,500	.05	.05	.211	.175	.40	.221
Placer	28,150	85,200	.05	.06	.31	.16	.36	.40
Plumas	25,000	---------	.057	---------	.30	---------	.305	.30
Riverside	302,750	412,150	.057	.0578	.23	.21	.38	.26
Sacramento	690,380	940,090	.052	.051	.21	.18	---------	---------
San Benito	23,450	21,850	.055	---------	.18	.103	---------	---------
San Bernardino	592,500	629,500	.05	.05	.195	.186	.316	.475
San Diego	895,550	860,200	.056	.056	.24	.26	.41	.13
San Francisco	5,220,000	5,228,600	.0425	.0406	---------	---------	---------	---------
San Joaquin	722,985	772,960	.06	.06	.201	.16	.148	.1164
San Luis Obispo	15,700	87,000	.063	.061	.165	.132	---------	---------
San Mateo	291,500	380,750	.05	.05	.114	.12	.11	---------
Santa Barbara	128,150	125,425	.058	.054	.135	.1766	.44	---------
Santa Clara	561,550	622,500	.053	.05	.19	.16	---------	.21
Santa Cruz	135,710	113,870	.053	.05	.20	.162	.197	---------
Shasta	10,110	7,150	.056	---------	.252	.40	.70	---------
Sierra	5,250	---------	---------	---------	.15	.15	---------	---------
Siskiyou	30,200	30,500	.06	.061	.267	.199	---------	.365
Solano	58,500	99,000	.02	.054	.13	.16	---------	---------
Sonoma	198,763	197,271	.055	.058	.135	.164	.237	---------
Stanislaus	523,482	522,807	.05	.0544	.24	.153	.31	---------
Sutter	14,000	17,950	.06	.06	.19	.113	.14	---------
Tehama	13,900	35,200	.05	.06	.525	.760	.225	.13
Trinity	---------	---------	---------	---------	---------	.25	---------	.70
Tulare	547,290	551,662	.059	.06	.204	.2006	.88	.30
Tuolumne	49,500	45,750	.057	---------	---------	.17	---------	---------
Ventura	72,500	135,800	.052	.0525	.12	.16	.242	.60
Yolo	116,750	111,500	.055	.05	.151	.155	.60	.60
Yuba	28,200	28,200	.052	.051	.166	.15	---------	---------
Totals	$24,093,010	$28,600,496	*$0.054	*$0.0567	*$0.214	*$0.188	*$0.321	*$0.321

*Average.

HIGH SCHOOLS.

SECONDARY (HIGH) SCHOOLS.

Table No. 13. Number of Teachers—Regular and Special—Men and Women for 1915 and 1916.

Table No. 14. Grade of Certificate Held by Teachers.

Table No. 15. Number of Pupils Enrolled—Boys and Girls and Postgraduate Pupils Enrolled—Boys and Girls for 1915 and 1916.

Table No. 16. Number of Pupils Enrolled by Grades—Boys and Girls, for 1915 and 1916.

Table No. 17. Number of Graduates—Boys and Girls—1915 and 1916 and Average Daily Attendance for Both Years.

Table No. 18. Total State Aid Apportioned to High Schools by Counties; Total Receipts from All Sources and Total Expenditure by High Schools—1915 and 1916.

Table No. 19. Total Valuation of All High School Property by Counties; Average District Tax Rate for Maintenance and for Buildings—1915 and 1916—and Average County Tax Rate for High Schools.

Table No. 20. Total Bonded Debt Outstanding and Rate of Interest (Average by County) Paid on Bonds.

Table No. 21. Average Salary Paid Teachers—Men and Women for 1915, and Average Annual Salary Paid—Principals—Men and Women; Regular Teachers—Men and Women; Special Teachers—Men and Women for 1916. The Number of Each Is Given.

TABLE No. 13.

Statistics of Secondary (High) Schools, Showing Number of Schools and Number of Teachers, by Sex and by County.

Counties	Number of teachers, 1915		Regular high school, 1916				Total number teachers, 1916
			Regular teachers		Special teachers		
	Men	Women	Men	Women	Men	Women	
Alameda	94	175	112	188	3	8	311
Alpine	--------	--------	--------	--------	--------	--------	--------
Amador	5	7	4	5	2	2	13
Butte	16	20	11	20	3	3	37
Calaveras	3	5	4	4	--------	--------	8
Colusa	10	16	9	16	--------	--------	25
Contra Costa	14	35	9	33	3	6	51
Del Norte	1	5	1	3	1	1	6
El Dorado	3	3	3	3	--------	--------	6
Fresno	58	66	46	54	19	12	131
Glenn	7	5	5	5	2	2	14
Humboldt	14	18	10	21	3	1	35
Imperial	21	29	20	20	5	7	52
Inyo	4	6	4	5	--------	2	11
Kern	22	15	19	20	7	6	52
Kings	12	12	8	11	4	4	27
Lake	4	4	4	4	--------	--------	8
Lassen	3	3	3	3	--------	--------	6
Los Angeles	423	660	304	564	220	355	1,443
Madera	4	5	3	5	2	1	11
Marin	11	16	5	14	5	3	27
Mariposa	1	--------	1	1	--------	--------	2
Mendocino	12	19	12	19	2	--------	33
Merced	12	22	9	16	4	9	38
Modoc	6	7	4	6	2	2	14
Mono	--------	--------	--------	--------	--------	--------	--------
Monterey	13	23	9	19	5	4	37
Napa	8	14	6	11	2	5	24
Nevada	5	10	6	12	--------	--------	18
Orange	47	61	36	38	15	23	112
Placer	10	15	10	15	1	1	27
Plumas	2	2	1	3	--------	--------	4
Riverside	43	48	32	34	10	13	89
Sacramento	36	37	42	47	--------	--------	89
San Benito	5	3	3	3	1	--------	7
San Bernardino	47	62	30	33	22	28	113
San Diego	60	84	60	71	26	25	182
San Francisco	86	81	62	63	38	44	207
San Joaquin	22	26	18	22	7	5	52
San Luis Obispo	10	10	9	8	2	4	23
San Mateo	10	17	6	14	5	5	30
Santa Barbara	23	22	15	16	10	6	47
Santa Clara	43	74	24	57	19	26	126
Santa Cruz	13	24	7	20	4	5	36
Shasta	10	9	7	6	4	2	19
Sierra	1	2	1	2	--------	--------	3
Siskiyou	5	11	6	9	--------	3	18
Solano	13	25	11	25	3	5	44
Sonoma	15	37	15	34	4	5	58
Stanislaus	25	27	22	28	6	11	67
Sutter	3	4	3	4	--------	--------	7
Tehama	7	10	6	8	3	3	20
Trinity	2	2	1	2	1	--------	4
Tulare	34	47	28	37	10	11	86
Tuolumne	5	8	3	7	3	--------	13
Ventura	17	19	11	15	7	7	40
Yolo	8	13	6	14	1	--------	21
Yuba	6	9	6	4	2	3	15
Totals	*1,394	*1,989	1,112	1,721	498	668	3,999

*Previous to 1916 teachers were not segregated, except as to men and women. In reports for 1916 teachers are segregated, as given above.

NOTE.—Reports show no teachers in postgraduate schools. Evidently regular high school teachers are used, though there are 1,118 pupils taking this work.

TABLE No. 14.

Statistics of Secondary (High) Schools, Showing Certificates Held by Teachers.

Counties	Certificates, 1915		Certificates, 1916	
	Regular high	Special	Regular high	Special
Alameda	192	77	219	92
Alpine				
Amador	11	1	9	4
Butte	30	6	31	6
Calaveras	7	1	7	1
Colusa	26		25	
Contra Costa	35	14	42	9
Del Norte	4	2	4	2
El Dorado	5	1	5	1
Fresno	98	26	101	30
Glenn	11	1	10	4
Humboldt	29	3	31	4
Imperial	33	17	36	16
Inyo	8	2	9	2
Kern	24	13	39	13
Kings	17	7	19	8
Lake	6	2	8	
Lassen	5	1	6	
Los Angeles	689	394	868	575
Madera	6	3	8	3
Marin	17	10	16	11
Mariposa	1		2	
Mendocino	24	7	29	4
Merced	28	6	25	13
Modoc	9	4	10	4
Mono				
Monterey	24	12	28	9
Napa	21	1	17	7
Nevada	13	2	16	2
Orange	74	34	74	38
Placer	24	1	23	4
Plumas	4		4	
Riverside	74	17	66	23
Sacramento	47	26	58	31
San Benito	7	1	6	1
San Bernardino	57	52	64	49
San Diego	101	43	131	51
San Francisco	110	57	126	81
San Joaquin	33	15	49	3
San Luis Obispo	17	3	17	6
San Mateo	16	11	21	9
Santa Barbara	30	15	31	16
Santa Clara	80	37	81	45
Santa Cruz	28	9	27	9
Shasta	15	4	13	6
Sierra	3		3	
Siskiyou	14	2	15	3
Solano	31	7	36	8
Sonoma	46	6	49	9
Stanislaus	43	9	51	16
Sutter	4	3	5	2
Tehama	16	1	14	6
Trinity	3	1	3	1
Tulare	67	14	66	20
Tuolumne	10	3	10	3
Ventura	25	11	26	14
Yolo	16	5	20	1
Yuba	9	6	10	5
Totals	2,377	1,006	2,709	1,290

TABLE No. 15.

Statistics of Secondary (High) Schools, Showing Enrollment of Pupils in Regular High Schools and Postgraduate High Schools

Counties	Regular high schools				Grand totals		Postgraduate high schools, 1916				Grand total, 1916
	1915		1916				First year		Second year		
	Boys	Girls	Boys	Girls	1915	1916	Boys	Girls	Boys	Girls	
Alameda	2,848	3,265	3,924	4,191	6,113	8,115					
Alpine											
Amador	75	123	79	119	198	198					
Butte	332	462	379	527	794	906					
Calaveras	52	73	61	75	125	136					
Colusa	106	134	104	125	240	229					
Contra Costa	312	408	359	469	720	828		2			2
Del Norte	31	46	26	43	77	69					
El Dorado	52	70	33	74	122	107					
Fresno	1,060	1,197	1,185	1,273	2,257	2,458	49	38	14	6	107
Glenn	113	122	127	128	235	255					
Humboldt	322	419	343	447	741	790					
Imperial	323	356	445	405	679	850	1	4	1	2	8
Inyo	63	90	80	100	153	180					
Kern	245	277	347	385	522	732	14	5	3	1	23
Kings	141	206	178	252	347	430					
Lake	65	88	79	80	153	159					
Lassen	17	32	24	50	49	74					
Los Angeles	15,042	15,761	18,889	19,328	30,803	38,217	252	380	47	48	727
Madera	51	69	58	108	120	166					
Marin	199	266	266	283	465	549					
Mariposa	9	15	8	18	24	26					
Mendocino	202	304	237	324	506	561					
Merced	173	233	205	235	406	440		1			1
Modoc	86	73	85	88	159	173					
Mono											
Monterey	240	276	235	321	516	556					
Napa	201	253	213	257	454	470					
Nevada	157	198	159	209	355	368					
Orange	775	976	919	1,103	1,751	2,022	23	37	10	7	77
Placer	169	192	167	209	361	376	8	8	5	2	23
Plumas	19	31	18	25	50	43					
Riverside	630	715	738	771	1,345	1,509					
Sacramento	1,185	1,233	1,489	2,106	2,418	3,595					
San Benito	59	106	55	110	165	165					
San Bernardino	854	987	965	1,105	1,841	2,070					
San Diego	1,232	1,359	2,230	2,413	2,591	4,643	29	44	4	7	84
San Francisco	3,308	2,818	4,829	3,717	6,126	8,546					
San Joaquin	422	563	480	653	985	1,133					
San Luis Obispo	130	176	153	201	306	354					
San Mateo	281	284	300	320	565	620					
Santa Barbara	384	461	367	492	845	859	15	15	6	11	47
Santa Clara	1,060	1,346	1,549	1,731	2,406	3,280					
Santa Cruz	320	397	331	470	717	801					
Shasta	152	189	162	183	341	345					
Sierra	14	9	15	11	23	26					
Siskiyou	91	135	101	138	226	239	1	15	1		17
Solano	277	377	292	412	654	704					
Sonoma	478	665	511	654	1,143	1,165					
Stanislaus	376	518	423	591	894	1,014					
Sutter	62	40	64	39	102	103					
Tehama	138	211	155	240	349	395					
Trinity	16	18	16	23	34	39					
Tulare	688	809	790	889	1,497	1,679	1	1			2
Tuolumne	75	132	81	124	207	205					
Ventura	259	312	325	369	571	694					
Yolo	161	232	165	237	393	402					
Yuba	86	104	168	169	190	337					
Totals	36,218	40,211	45,986	49,419	76,429	95,405	393	550	91	84	1,118

TABLE No. 16.

Statistics of Secondary (High) Schools, Showing Enrollment of Students by Grades and by Sex for the State in the Regular High Schools and in the Postgraduate High Schools.

Enrolled in regular high schools	1915	1916
First year—		
Boys	19,314	23,797
Girls	19,097	23,009
Second year—		
Boys	7,823	9,930
Girls	9,257	11,159
Third year—		
Boys	5,009	6,683
Girls	6,109	8,342
Fourth year—		
Boys	4,072	5,576
Girls	5,748	6,909
Totals—		
Boys	36,218	45,986
Girls	40,211	49,419
Grand totals	76,429	95,405
**Enrolled in Postgraduate High Schools.*		
First year—		
Boys	----------	393
Girls	----------	550
Second year—		
Boys	----------	91
Girls	----------	84
Total—		
Boys	----------	484
Girls	----------	634
Grand total	----------	1,118

*This course is often popularly called the "Junior College." The law provides for postgraduate high school work.

NOTE.—The table above shows no postgraduate pupils before the year 1916. There were some, but there was no note made of this as they were enrolled in the regular high schools. Many students now return to the high school for work in studies that they could not take in their regular course. They are not classed as postgraduate pupils for the reason that they are not pursuing the regular postgraduate work.

TABLE No. 17.

Statistics of Secondary (High) Schools, Showing Number of Graduates by Sex and Average Daily Attendance by Counties.

Counties	Total number of graduates						Average daily attendance	
	1915		1916		Totals			
	Boys	Girls	Boys	Girls	1915	1916	1915	1916
Alameda	316	392	367	453	708	820	5,360	6,039
Alpine	--------	--------	--------	--------	--------	--------	--------	--------
Amador	9	12	11	35	21	46	179	181
Butte	48	57	52	107	105	159	649	685
Calaveras	13	18	8	8	31	16	119	122
Colusa	15	21	20	33	36	53	205	199
Contra Costa	37	44	43	56	81	99	631	695
Del Norte	7	8	--------	--------	15	--------	64	57
El Dorado	13	15	7	11	28	18	107	93
Fresno	117	183	129	171	300	300	1,905	2.015
Glenn	12	16	16	16	28	32	197	202
Humboldt	45	73	38	76	118	114	623	657
Imperial	36	41	37	40	77	77	553	623
Inyo	6	8	9	20	14	29	136	160
Kern	29	27	41	58	56	99	425	591
Kings	13	27	22	36	40	58	304	363
Lake	5	9	4	11	14	15	127	139
Lassen	3	5	4	6	8	10	46	68
Los Angeles	1,190	1,512	1,126	1,549	2,702	2,675	16,762	18,154
Madera	3	8	3	15	11	18	111	140
Marin	22	35	20	39	57	59	374	424
Mariposa	--------	--------	--------	1	--------	1	18	21
Mendocino	29	41	28	53	70	--------	431	474
Merced	19	50	22	30	69	52	323	372
Modoc	9	3	17	4	12	21	120	139
Mono	--------	--------	--------	--------	--------	--------	--------	--------
Monterey	40	37	29	45	77	74	432	458
Napa	17	38	26	18	55	44	374	369
Nevada	24	36	22	30	60	52	314	331
Orange	86	142	123	159	228	282	1,551	1.694
Placer	23	25	24	37	48	61	312	330
Plumas	2	3	--------	--------	5	--------	35	34
Riverside	67	100	90	112	167	202	1.173	1.282
Sacramento	77	126	57	106	203	163	1,388	1.512
San Benito	15	20	7	19	35	26	147	158
San Bernardino	119	150	136	150	269	286	1.565	1.725
San Diego	114	149	122	194	263	316	2.079	2.297
San Francisco	293	416	398	336	709	734	3,853	4.516
San Joaquin	46	84	53	87	130	140	186	927
San Luis Obispo	11	22	20	25	33	45	254	299
San Mateo	24	24	16	39	48	55	378	408
Santa Barbara	43	43	35	67	86	102	620	688
Santa Clara	143	209	156	233	352	389	1,995	2.411
Santa Cruz	41	56	36	61	97	97	607	658
Shasta	13	20	17	34	33	51	266	273
Sierra	2	1	--------	--------	3	--------	18	18
Siskiyou	6	27	20	27	33	47	198	211
Solano	32	51	37	59	83	96	522	570
Sonoma	52	105	69	101	157	170	961	1,012
Stanislaus	55	62	55	73	117	128	792	861
Sutter	13	10	11	12	23	23	95	99
Tehama	13	33	14	38	46	52	307	332
Trinity	1	1	2	1	2	3	27	33
Tulare	91	130	101	157	221	258	1,313	1.387
Tuolumne	9	25	7	19	34	26	182	176
Ventura	25	41	44	58	66	102	499	613
Yolo	24	41	20	47	65	67	346	357
Yuba	8	19	10	10	27	20	166	230
Totals	3,525	4,851	3,781	5,182	8,376	8,882	53,397	58,881

TABLE No. 18.

Statistics of Secondary (High) Schools, Showing Total State Apportionment, Total Receipts and Total Expenditures by Counties.

Counties	Total state apportionment, 1915	Total state apportionment, 1916	Total receipts, including state apportionment		Total expenditures	
			1915	1916	1915	1916
Alameda	$55,151 98	$63,624 90	$949,005 68	$719,731 61	$912,481 85	$675,616 95
Alpine	--------	--------	--------	--------	--------	--------
Amador	4,280 91	4,811 76	36,449 04	37,665 08	27,236 09	30,227 81
Butte	9,813 77	10,514 91	68,909 66	83,332 06	54,912 77	61,199 95
Calaveras	2,963 83	3,204 51	21,046 69	22,854 20	14,100 03	14,355 78
Colusa	6,935 05	7,386 90	60,884 05	60,997 68	46,635 08	45,094 92
Contra Costa	12,026 75	13,358 64	131,974 43	158,996 52	106,344 25	111,510 89
Del Norte	1,666 73	1,647 21	15,016 56	16,944 84	9,317 69	10,136 92
El Dorado	1,976 42	2,076 78	14,233 70	16,704 19	10,426 64	10,813 33
Fresno	29,311 44	32,522 61	431,882 00	483,888 41	324,318 80	327,824 83
Glenn	3,253 54	3,704 01	120,401 15	40,746 14	113,765 84	28,365 46
Humboldt	9,743 84	10,255 17	204,099 53	117,133 75	176,219 08	84,893 25
Imperial	9,152 83	10,563 72	257,636 56	310,937 67	178,220 91	177,610 33
Inyo	3,023 77	3,374 34	30,810 19	17,887 79	25,460 07	17,910 43
Kern	6,250 54	6,381 33	160,554 64	275,485 17	133,222 71	142,589 05
Kings	4,559 63	5,910 66	72,722 30	78,432 36	64,279 17	63,738 05
Lake	1,906 49	3,284 43	14,736 83	45,798 51	10,671 81	12,976 63
Lassen	1,357 04	1,467 39	16,107 87	17,002 55	11,212 43	11,988 56
Los Angeles	186,152 80	206,758 53	4,853,860 54	5,731,542 81	3,411,348 58	4,115,073 10
Madera	1,836 56	2,116 74	21,576 31	32,827 85	16,231 21	28,207 14
Marin	6,518 67	6,759 81	52,995 66	60,018 93	48,242 11	50,390 15
Mariposa	--------	1,187 67	3,378 06	6,737 76	2,026 94	4,190 67
Mendocino	10,228 55	11,360 64	90,011 94	92,564 44	52,511 80	54,148 31
Merced	8,871 51	9,503 64	125,766 88	101,539 08	106,151 82	76,222 04
Modoc	2,983 81	3,214 50	26,731 85	24,077 49	21,578 52	21,469 17
Mono	--------	--------	--------	--------	--------	--------
Monterey	8,953 03	9,354 93	123,075 42	80,043 54	117,059 82	68,382 49
Napa	6,348 84	6,759 81	50,787 34	63,096 21	36,533 32	47,989 96
Nevada	5,689 50	6,160 41	23,528 25	30,315 81	21,963 90	26,742 04
Orange	18,813 16	20,533 74	270,162 13	303,640 71	242,655 77	280,702 30
Placer	5,469 72	6,140 43	96,192 07	62,871 02	52,326 53	46,267 63
Plumas	1,217 18	1,357 50	9,525 28	12,556 39	8,883 13	9,731 05
Riverside	19,724 24	22,804 62	235,179 96	247,000 81	176,324 41	169,868 40
Sacramento	17,564 41	18,775 50	208,688 91	215,226 21	158,267 04	204,064 80
San Benito	2,376 02	2,476 38	15,040 31	16,713 84	13,581 87	14,112 79
San Bernardino	19,770 60	21,681 45	539,831 74	476,338 06	342,982 99	354,041 31
San Diego	26,868 69	29,839 86	351,925 94	346,630 80	313,921 54	294,163 83
San Francisco	43,015 73	45,546 42	522,265 02	515,119 86	522,265 02	488,435 11
San Joaquin	11,831 75	12,612 81	191,467 50	138,494 98	167,238 12	129,180 14
San Luis Obispo	5,269 92	5,561 01	45,577 54	46,886 50	35,795 14	37,841 50
San Mateo	6,856 73	8,815 47	90,645 49	104,696 98	57,335 87	70,786 76
Santa Barbara	9,424 16	11,233 05	105,137 29	118,935 51	91,908 80	92,389 80
Santa Clara	26,270 89	27,992 85	228,894 30	317,299 93	210,766 56	236,467 91
Santa Cruz	8,756 43	9,087 48	235,478 65	138,352 57	173,358 01	132,166 02
Shasta	4,900 29	5,680 89	45,581 93	48,559 24	32,455 37	33,107 83
Sierra	1,137 26	1,187 67	6,370 69	5,578 81	5,040 02	5,035 76
Siskiyou	4,650 54	5,001 57	51,645 30	62,396 30	45,503 77	52,124 28
Solano	10,559 82	11,171 97	269,541 80	178,074 48	185,766 60	156,222 42
Sonoma	14,266 11	15,647 49	232,280 50	238,625 56	119,931 23	195,019 20
Stanislaus	14,252 92	15,974 88	213,080 43	180,878 81	182,743 21	118,537 96
Sutter	1,826 57	1,956 90	25,250 66	18,597 19	23,711 61	13,776 88
Tehama	4,792 00	5,082 63	36,896 53	148,219 65	29,895 81	50,551 78
Trinity	1,277 12	1,277 58	7,600 73	8,111 68	5,934 54	5,826 29
Tulare	18,958 21	21,598 11	184,420 31	239,109 56	156,799 86	188,001 08
Tuolumne	3,513 28	3,833 88	29,924 91	31,943 72	23,773 60	25,045 35
Ventura	9,082 90	10,024 26	177,678 82	120,021 74	128,574 45	88,685 50
Yolo	6,318 87	6,679 89	85,789 11	107,087 49	59,445 21	77,905 01
Yuba	3,513 28	3,674 04	26,237 27	27,935 93	24,207 61	24,013 05
Totals	$724,236 63	$800,516 28	$12,516,494 25	$13,203,206 78	$9,643,866 93	$9,913,739 95

TABLE No. 19.

Statistics of Secondary (High) Schools, Showing Total Valuation of All Property, Average Rate of High School Tax and Rate of County Tax for High School Purposes.

Counties	Total valuation of all property		District tax rate				County tax rate, 1916
			Maintenance		Building		
	1915	1916	1915	1916	1915	1916	
Alameda	$2.261.443	$2.185.493	$0.285	$0.13	$0.04	--------	$0.14
Alpine	--------	--------	--------	--------	--------	--------	--------
Amador	70,615	77,775	.40	.15	.15	.10	.20
Butte	113,400	119,600	.337	.11	--------	--------	.225
Calaveras	13,350	14,450	.275	.15	--------	--------	.11
Colusa	102,150	103,800	.24*	.22	--------	--------	.10
Contra Costa	242,662	256,675	.29	.22	--------	.03	.10
Del Norte	17,350	17,750	.18	--------	--------	--------	.19
El Dorado	30,000	30,000	.18	.18	--------	--------	.114
Fresno	588,705	681,222	.45	.344	.20	--------	.15
Glenn	153,900	157,700	.175	.14	.15	--------	.08
Humboldt	195,900	211,050	.4211	.07085	.2723	--------	.12
Imperial	440,183	498,427	.606	.332	--------	--------	.15
Inyo	36,665	36,941	.345	.13	--------	--------	.10
Kern	298,700	397,678	.297	.29	.06	.03	--------
Kings	145,200	161,550	.48	.303	.60	--------	.13
Lake	3,127	6,978	.225	.21	--------	--------	.165
Lassen	38,000	38,500	.15	.16	--------	--------	.05
Los Angeles	7,373,254	9,099,551	.373	.37	.077	--------	.145
Madera	62,500	73,533	.15	.14	--------	.07	.06
Marin	103,300	106.450	.28	.226	--------	--------	.11
Mariposa	486	1,347	.10	--------	--------	--------	.13
Mendocino	102,977	97,609	.31	.1064	--------	.0516	.17
Merced	212,444	215,775	.333	.241	--------	--------	.10
Modoc	71,250	71,480	.325	.106	--------	--------	.10
Mono	--------	--------	--------	--------	--------	--------	--------
Monterey	199,450	204,700	.40	.184	--------	--------	.10
Napa	104,400	106,000	.34	.27	--------	--------	.14
Nevada	47,800	46,050	.33	.10	.20	--------	.30
Orange	891,150	912,800	.754	.50	.232	.15	.20
Placer	102,150	146,775	.46	.29	.07	--------	.20
Plumas	44,900	49,550	.12	--------	--------	--------	--------
Riverside	590,795	565,972	.58	.379	--------	.35	.29
Sacramento	576,900	618,680	.295	.065	--------	--------	.104
San Benito	62,500	54,000	.15	--------	--------	--------	.15
San Bernardino	871,845	923,035	.45	.32	--------	--------	.224
San Diego	756,160	790,800	.60	.515	--------	.153	.19
San Francisco	3,003,894	3,135,786	--------	--------	--------	--------	.047
San Joaquin	580,786	544,103	.265	.129	.16	--------	.09
San Luis Obispo	90,340	91,300	.65	.436	--------	--------	.09
San Mateo	383,585	396,250	.2675	.155	.086	--------	.07
Santa Barbara	128,500	229,730	.43	.268	--------	--------	.14
Santa Clara	511,750	528,772	.419	.20	.103	.10	.16
Santa Cruz	239,511	251,650	.39	.41	.15	--------	.195
Shasta	78,895	78,650	.25	.10	--------	--------	.14
Sierra	2,750	750	--------	.12	.20	--------	.216
Siskiyou	72,921	77,500	.246	.388	.55	.121	.07
Solano	219,875	340,950	.36	.233	.12	--------	.14
Sonoma	225,825	345,075	.29	.2975	.12	--------	.159
Stanislaus	283,188	292.418	.43	.47	.59	--------	.20
Sutter	32,000	38,000	.33	.33	.04	--------	.10
Tehama	92,000	92,510	.40	.20	--------	--------	.15
Trinity	10,248	10,395	.15	--------	--------	--------	.15
Tulare	286,209	351,185	.63	.292	--------	--------	.20
Tuolumne	100,300	100,050	.35	.35	.01	--------	.25
Ventura	307,975	320,525	.426	.174	.1375	--------	.11
Yolo	146,414	204,325	.345	.21	.20	--------	.102
Yuba	64,050	79,050	.55	.525	--------	--------	.05
Totals	$23,786,827	$26,588,670	†$0.345	†$0.235	†$0.168	†$0.1125	†$0.142

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*County tax rate for high schools was not used except in county high schools previous to 1916, as the law went into effect August 12, 1915.

†Average.

TABLE No. 20.

Statistics of Secondary Schools, Showing Bonded Debt Against High School Districts and Average Rate of Interest Paid on Bonds Issued.

Counties	Bonded debt		Average rate of interest paid on bonds issued	
	1915	1916	1915	1916
Alameda	$972,393	$881,989	$0.0475	$0.045
Alpine	--------	--------	--------	--------
Amador	24,000	24,000	.06	.05
Butte	--------	4,000	--------	.05
Calaveras	--------	--------	--------	--------
Colusa	53,000	52,500	.05	.05
Contra Costa	91,500	86,500	.046	.05
Del Norte	--------	--------	--------	--------
El Dorado	--------	--------	--------	--------
Fresno	143,000	180,500	.0525	.053
Glenn	--------	90,000	.055	.055
Humboldt	152,500	176,000	.05	.05
Imperial	319,000	436,000	.057	.06
Inyo	11,500	11,500	.07	.07
Kern	50,000	170,000	.06	.06
Kings	45,000	45,000	.05	.05
Lake	--------	25,000	--------	.05
Lassen	--------	--------	--------	--------
Los Angeles	5,219,000	5,980,300	.052	.05
Madera	--------	--------	--------	--------
Marin	44,000	44,000	.05	.05
Mariposa	--------	--------	--------	--------
Mendocino	11,500	--------	.048	--------
Merced	35,000	34,000	.055	.055
Modoc	--------	--------	--------	--------
Mono	--------	--------	--------	--------
Monterey	27,000	25,000	.05	.05
Napa	49,500	47,500	.05	.05
Nevada	27,750	27,000	.055	.05
Orange	587,500	567,750	.057	.05
Placer	117,500	55,000	.055	--------
Plumas	--------	--------	--------	--------
Riverside	462,000	406,000	.05	.048
Sacramento	182,000	180,000	.051	.0516
San Benito	21,000	18,000	.045	.045
San Bernardino	572,500	592,500	.05	.05
San Diego	383,000	371,250	.053	.053
San Francisco	550,000	525,000	.045	.045
San Joaquin	285,500	347,500	.055	.051
San Luis Obispo	30,000	30,000	.05	.05
San Mateo	208,000	184,000	.041	.05
Santa Barbara	16,200	14,400	.05	.055
Santa Clara	246,000	279,500	.048	.048
Santa Cruz	160,000	180,000	.05	.05
Shasta	--------	--------	--------	--------
Sierra	--------	--------	--------	--------
Siskiyou	--------	--------	--------	--------
Solano	238,000	229,000	.05	.05
Sonoma	211,000	206,500	.05	.05
Stanislaus	161,000	158,800	.05*	.05
Sutter	16,000	--------	.06	--------
Tehama	58,000	142,000	.047	.05
Trinity	--------	--------	--------	--------
Tulare	189,000	233,500	.052	.06
Tuolumne	18,000	17,000	.05	.05
Ventura	185,000	149,000	.05	.05
Yolo	138,000	130,000	.05	.05
Yuba	39,000	3,700	.055	.045
Totals	$12,349,843	$13,361,189	*$0.0516	*$0.0514

*Average.

TABLE No. 21.

Statistics of Secondary (High) Schools, Showing Average Annual Salary Paid Teachers.

Counties	1915		Principals				Regular teachers				Special teachers			
	Men	Women	No.	Men	No.	Women	No.	Men	No.	Women	No.	Men	No.	Women
Alameda	$1,706 79	$1,472 53	10	$2,707 00			102	$1,391 39	189	$1,517 72	3	$1,120 00	7	$1,131 00
Alpine														
Amador	1,400 00	1,268 00	3	1,583 33			1	1,200 00	5	1,120 00	2	1,150 00	2	1,100 00
Butte	1,462 50	961 25	4	2,200 00			7	1,230 86	20	1,032 75	3	1,200 00	3	1,000 00
Calaveras	1,600 00	1,120 00	2	1,800 00			2	1,350 00	4	1,175 00				
Colusa	1,555 00	1,103 12	5	1,900 00			4	1,275 00	16	1,125 00				
Contra Costa	1,777 57	1,162 94	6	2,236 36	1	$1,400 00	4	1,477 50	32	1,233 12	3	1,166 67	5	728 00
Del Norte	1,750 00	1,025 00	1	1,800 00					3	1,050 00	1	1,100 00	1	1,000 00
El Dorado	1,400 00	1,166 66	1	1,800 00			1	1,200 00	3	1,166 66				
Fresno	1,565 00	1,201 17	11	2,095 45	8	1,403 12	36	1,495 86	45	1,239 11	19	1,440 52	12	1,262 50
Glenn	*1,435 71	1,060 00	2	2,160 00			3	1,283 33	5	1,060 00	2	1,225 00	2	950 00
Humboldt	1,516 07	1,151 35	4	1,875 00			6	1,300 00	21	1,113 21	3	1,300 00	1	1,000 00
Imperial	1,676 19	1,101 92	5	2,460 00			12	1,407 50	17	1,186 17	8	1,383 37	10	956 95
Inyo	1,443 75	1,125 00	2	1,750 00			2	1,125 00	5	1,055 00			2	1,083 00
Kern	1,537 19	1,081 33	4	2,000 00	1	1,800 00	15	1,513 33	19	1,149 00	7	1,414 00	6	916 00
Kings	1,577 31	1,195 83	3	1,983 33			5	1,410 00	11	1,240 90	4	1,387 50	4	975 00
Lake	1,162 50	962 50	2	1,750 00			2	1,200 00	4	1,100 00				
Lassen	1,395 00	1,114 16	1	1,800 00			2	1,282 50	3	1,095 00				
Los Angeles	1,631 50	1,443 30	37	2,625 38	1	3,000 00	268	1,727 95	563	1,468 04	219	1,524 13	355	1,449 60
Madera	1,150 00	970 11	2	1,540 00			1	1,300 00	5	1,169 50	2	975 00	1	1,200 00
Marin	1,510 50	1,069 00	2	2,200 00			3	1,633 00	13	1,311 00	5	1,436 00	4	970 00
Mariposa	1,350 00		1	1,600 00					1	1,200 00				
Mendocino	1,592 95	966 96	7	1,714 28			5	1,220 00	19	1,094 74	2	700 00		
Merced	1,595 83	1,143 18	6	1,950 00			3	1,366 67	16	1,159 37	4	837 50	9	955 55
Modoc	1,500 00	1,064 00	3	1,862 92			1	1,100 00	6	1,050 00	2	1,175 00	2	1,075 00
Mono														
Monterey	1,656 00	1,228 00	5	2,116 00			4	1,550 00	19	1,205 00	5	1,370 00	4	862 50
Napa	1,642 50	1,152 85	3	1,966 66			4	1,370 00	10	1,120 00	2	1,500 00	5	1,100 00
Nevada	1,299 00	1,147 23	3	1,933 33			3	1,386 66	12	1,105 00				
Orange	1,439 00	1,183 01	5	2,470 00			31	1,366 13	38	1,244 00	15	1,361 60	23	1,167 39
Placer	1,360 00	1,283 33	3	1,966 66			7	1,675 00	15	1,175 00	1	350 00	1	350 00
Plumas	1,500 00	1,200 00	1	1,800 00					3	1,200 00				
Riverside	1,267 00	909 00	10	1,745 00	1	1,450 00	21	1,458 00	34	1,137 00	10	1,093 00	13	891 00
Sacramento	1,253 55	1,296 14	5	1,940 00			37	1,293 60	47	1,226 54				
San Benito	1,303 00	1,316 66	1	2,400 00			3	1,233 30	3	1,316 66				

San Bernardino	1,395 00	1,029 63	8	2,119 00			24	1,386 00	33	1,264 00	21	1,464 00	27	1,125 00
San Diego	1,499 37	1,175 81	12	1,627 83	1	1,400 00	48	1,445 33	70	1,330 53	26	1,432 65	25	1,216 62
San Francisco	1,501 00	1,536 00	8	2,415 00			56	1,501 71	61	1,546 80	38	1,277 68	44	1,265 45
San Joaquin	1,712 50	1,249 85	4	2,162 50			14	1,656 65	22	1,305 77	7	1,505 68	5	1,077 81
San Luis Obispo	1,513 00	1,259 50	3	1,950 07			6	1,471 70	8	1,176 77	2	825 00	4	677 50
San Mateo	1,914 50	1,292 59	3	2,366 66			4	1,600 00	12	1,056 45	4	1,810 00	7	1,077 14
Santa Barbara	1,562 04	1,131 65	5	2,120 00			8	1,562 50	16	1,287 50	12	1,174 13	6	997 16
Santa Clara	1,607 41	1,250 73	8	2,073 93			18	1,534 44	57	1,215 20	17	1,505 53	26	1,132 10
Santa Cruz	1,673 17	1,106 92	2	1,950 00			6	1,516 00	19	1,195 00	4	1,375 00	5	1,010 00
Shasta	1,408 62	1,088 88	3	1,875 00			4	1,350 00	6	1,105 00	4	1,412 50	2	1,000 00
Sierra	1,800 00	1,200 00	1	1,800 00					2	1,200 00				
Siskiyou	1,640 00	1,172 73	2	2,300 00	1	1,435 00	4	1,387 50	8	1,175 00			3	1,183 33
Solano	1,596 15	1,195 80	6	2,133 33			5	1,410 00	25	1,180 80	3	1,333 33	5	1,074 00
Sonoma	1,680 00	1,129 72	7	1,835 71			9	1,601 48	34	1,175 83	4	937 50	4	300 00
Stanislaus	1,451 00	1,175 40	8	1,655 55			14	1,403 57	29	1,160 34	6	1,036 16	10	650 00
Sutter	1,471 66	1,202 50	1	1,800 00			2	1,200 00	4	1,200 00				
Tehama	1,418 55	1,150 00	2	2,125 00			4	1,140 15	8	1,156 15	3	826 66	3	1,133 33
Trinity	1,300 00	1,000 00	1	1,600 00					2	1,000 00	1	1,000 00		
Tulare	1,470 17	1,133 25	9	2,077 77			19	1,357 00	37	1,156 62	10	1,305 00	11	1,100 00
Tuolumne	1,220 00	1,212 50	2	1,900 00			1	1,200 00	6	1,066 00	3	1,233 00	1	1,000 00
Ventura	1,655 88	1,211 05	5	2,223 33			6	1,343 33	15	1,255 33	7	1,025 00	7	1,075 00
Yolo	1,364 50	1,164 57	2	1,825 00	1	1,600 00	4	1,362 50	13	1,161 53	1	1,000 00		
Yuba	1,300 00	930 60	2	1,905 00			4	1,565 00	4	1,076 25	1	120 00	4	807 50
Totals	†$1,502 96	†$1,157 20	264	†*$2,104 22	15	†*$1,574 00	856	†*$1,455 85	1,697	†*$1,331 40	496	†*$1,295 41	671	†*$1,271 70

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†Average.

*Previous to 1916 average salary of teachers was divided into men and women. For 1916 the reports are filed as given above. Special teachers often teach part time.

GENERAL SCHOOL STATISTICS.

Table No. 22.	Statistical Summary by Years of Kindergarten, Elementary and High Schools.
Table No. 23.	Statistical Summary, Showing Receipts and Expenditures for Kindergarten, Elementary and High Schools.
Table No. 24.	Total Expenditure by Counties for Salaries and Expenses of County Superintendents.
Table No. 25.	Total Expenditure by Counties in Payment of Salaries and Expenses of Members of County Boards of Education.
Table No. 26.	Expenditure by Cities for City Boards and for City Superintendents and Deputies and Expenses of These Officers.
Table No. 26a.	Expenses of Office of Superintendent of Public Instruction and State Board of Education.

TABLE No. 22.

GENERAL.

Statistical Summary, by Years, of the Kindergarten, Night, Primary and Grammar and High Schools of California, from 1851 to 1916, inclusive.

Years	Number of teachers	Number of children enrolled on school register	Average daily attendance
1851	------------	1,846	------------
1852	------------	3,314	------------
1853	------------	4,193	2,020
1854	214	9,746	4,635
1855	301	------------	6,442
1856	392	------------	8,495
1857	486	17,232	9,717
1858	517	19,822	11,183
1859	744	23,519	13,364
1860	831	26,993	14,750
1861	932	31,786	17,804
1862	962	36,566	19,262
1863	919	36,540	19,992
1864	1,079	47,588	24,794
1865	1,155	50,089	29,592
1866	1,268	50,273	------------
1867	1,389	62,227	------------
1868	1,590	65,828	43,681
1869	1,687	73,754	49,802
1870	1,869	85,808	54,271
1871	2,052	91,332	64,286
1872	2,301	94,720	65,700
1873	2,336	107,593	69,461
1874	2,452	120,240	72,283
1875	2,693	130,930	78,027
1876	2,894	140,468	83,391
1877	3,077	147,863	89,539
1878	3,393	154,064	94,696
1879	3,453	156,769	98,468
1880	3,595	158,765	100,966
1881	3,737	163,855	105,541
1882	3,777	168,024	107,177
1883	3,930	174,611	112,594
1884	4,083	179,801	124,814
1885	4,242	184,001	116,028
1886	4,444	189,220	125,718
1887	4,888	196,907	129,297
1888	4,938	207,050	132,277
1889	5,255	215,905	143,733
1890	5,434	221,756	146,589
1891	5,659	229,986	153,599
1892	5,891	238,106	158,875
1893	6,136	232,501	157,673
1894	6,257	235,837	164,664
1895	6,589	241,322	170,861
1896	6,885	249,335	176,083
1897	7,190	247,061	180,209
1898	7,432	259,459	185,424
1899	7,366	265,364	195,540
1900	7,605	269,736	197,395
1901	7,810	258,977	188,730
1902	8,072	264,038	197,217
1903	8,333	288,776	212,884
1904	8,652	299,038	222,182
1905	9,026	315,226	239,491
1906	9,371	328,127	248,722
1907	9,714	335,645	247,880
1908	10,222	347,193	262,522
1909	10,747	352,278	275,272
1910	11,369	368,391	286,730
1911	12,156	386,911	302,657
1912	13,248	414,078	323,657
1913	14,524	446,916	346,443
1914	15,618	501,021	374,493
1915	16,794	508,590	393,088
1916	17,860	540,688	410,978

TABLE No. 23.

GENERAL SUMMARY: 1851-1916.

Statement, by Years, Showing the Amount of Receipts and Expenditures for Public Primary, Grammar, High and Kindergarten Schools of the State of California, from 1851 to 1916, inclusive.

Years	Total amount of state school fund apportioned	Total amount raised by county and city taxes	Total amount raised from miscellaneous sources	Amount paid for salaries of teachers	Amount paid for repairs, fuel, and contingent expenses	Amount paid for libraries	Amount paid for apparatus	Amount paid for sites, buildings, and furniture	Total expenditures
1851				*	*	*	*	*	*
1852			$2,417 00	$21.355 42	$2,000 00	*	*	$4,748 32	$28,103 74
1853			10,626 00	30,215 00	10,525 00	*	*	13,491 01	54,231 01
1854	$52,061 00	$157,702 00	42,557 00	85,860 33	31,156 45	$3,990 52	*	151,822 52	272,829 82
1855	63,662 00	119,128 00	39,395 00	166,048 45	32,631 07	1,054 57	*	77,197 62	276,931 71
1856	69,961 00	121,639 00	28,619 00	200,941 00	49,668 84	2,127 16	*	52,484 00	305,221 00
1857	78,057 00	148,989 00	55,035 00	192,613 00	52,533 44	2,942 56	*	59,743 00	307,832 00
1858	53,405 00	162,870 00	85,107 00	203,276 37	45,395 92	3,042 78	*	88,199 70	339,914 77
1859	72,319 00	205,196 00	97,534 00	264,972 37	69,396 38	2,368 58	*	90,266 42	427,003 75
1860	81,118 00	230,514 00	122,858 00	311,165 38	50,989 41	1,756 09	*	110,352 86	474,263 74
1861	81,461 00	241,861 00	114,397 00	311,501 91	54,493 99	2,299 28	*	101,818 38	470,113 56
1862	75,412 00	294,828 00	141,806 00	330,249 02	59,479 76	2,225 57	*	49,274 62	441,228 97
1863	145,537 00	328,554 00	68,209 00	328,338 02	58,271 97	594 75	$2,271 22	93,931 53	483,407 49
1864	132,217 00	260,842 00	84,084 00	411,101 01	69,562 36	1,132 21	6,010 84	167,393 44	655,199 86
1865	168,828 00	390,306 00	91,181 00	526,585 14	89,056 57	5,792 01	3,777 86	257,804 98	883,016 56
1866	132,410 00	470,668 00	79,600 00	551,462 02	116,577 47	2,074 81	4,059 47	185,056 42	859,230 19
1867	268,910 00	595,718 00	81,066 00	696,110 28	206,412 25	10,125 01	5,431 83	238,070 64	1,156,150 01
1868	252,603 00	654,738 00	73,986 00	763,639 15	143,518 56	19,069 56	4,061 72	221,118 43	1,151,407 42
1869	290,796 00	847,229 00	66,531 00	873,814 07	185,672 91	20,415 76	4,915 83	205,766 95	1,290,585 52
1870	360,447 00	839,756 00	63,441 00	976,937 75	179,070 23	29,984 22	3,692 27	339,362 37	1,529,046 84
1871	423,853 00	923,809 00	46,660 00	1,103,125 14	289,691 57	26,766 30	3,689 46	390,158 50	1,713,430 97
1872	424,022 00	1,249,943 00	232,075 00	1,282,799 15	277,900 99	25,793 54	4,720 13	290,119 01	1,881,332 82
1873	430,220 00	1,541,597 00	310,502 00	1,434,366 93	275,674 70	24,879 48	4,365 70	374,069 44	2,113,356 25
1874	428,414 12	1,332,208 82	345,316 95	1,560,830 16	331,952 30	21,752 82	4,152 80	192,467 25	2,111,155 33
1875	1,212,252 03	1,115,530 06	676,259 64	1,810,479 62	381,806 62	33,962 72	10,713 02	421,279 36	2.658,241 34
1876	1,317,603 84	1,240,637 31	158,206 40	1,983,939 96	374,222 49	48,757 50	10,974 66	440,706 37	2,858,600 98
1877	1,474,600 26	1,486,233 73	137,100 31	2,149,435 70	378,754 50	55,148 64	18,964 19	147,426 43	2,749,729 46
1878	1,579,195 52	1,393,014 96	106,396 84	2,272,551 19	426.707 66	53,947 85	12,513 65	390,094 92	3,155,815 27
1879	1,423,941 75	1,446,852 04	92,852 41	2,285,732 39	371,992 13	46.490 50	13,565 73	293,126 38	3,010,907 13
1880	1,506,171 84	1,393,572 44	104,824 80	2,207,043 85	400,867 61	44,546 39	21,842 63	190,270 94	2,864,571 42
1881	1,790,457 62	1,343,306 02	32,048 79	2,346,056 58	401,572 56	79,432 10	15,694 04	204,849 66	3,047,604 94

1882	1,882,121 67	1,260,843 64	23,046 88	2,406,780 68	411,117 17	63,060 32	20,618 98	221,089 05	3,122,666 20
1883	1,890,724 20	1,315,818 96	32,462 71	2,511,078 40	419,760 85	61,032 26	26,504 11	293,839 66	3,312,215 28
1884	1,894,191 00	1,411,543 56	27,715 40	2,573,623 54	415.587 39	59,642 08	23,204 69	292,165 85	3,364,223 55
1885	1,831,171 44	1,694,959 45	53,140 83	2,583,403 46	433,972 56	64,056 08	16,787 03	466,811 74	3,565,030 87
1886	1,890,733 32	1,690,704 86	138,596 48	2,710,621 82	422,843 30	64,627 32	24,833 01	283,006 18	3,505,931 63
1887	2,027,789 40	1,793,809 95	51,250 25	2,912,859 30	480,455 63	64,189 18	23,679 10	408,704 96	3,889,888 17
1888	2,168,686 08	2,170,058 19	259,554 55	3,083,027 24	527,035 55	58,229 04	31,534 85	621,554 82	4,321,381 50
1889	2,531,880 00	2,442,254 64	337,006 91	3,343,191 80	624,810 95	59,522 72	33,791 82	935,548 42	4,996,865 71
1890	2,635,716 10	2,293,335 75	98,092 22	3,594,588 98	706,995 12	71,121 94	42,442 85	703,947 79	5,119,096 68
1891	2.662,200 08	2,249,975 72	134,192 19	3,713,544 37	732,148 98	72,714 87	45,352 20	548,740 11	5,112,500 53
1892	2,354.786 00	2,464,706 04	266,455 77	3,874,346 88	750,929 32	72,961 08	45,424 77	608,229 27	5,351,891 32
1893	3,403,072 72	2,404,898 76	774,090 08	4,055,888 51	806.717 80	76,677 51	46,837 62	723,565 66	5,709,687 10
1894	2,770,661 84	2,388,359 31	337,815 12	4,005,721 80	752,757 68	61,890 04	30,130 55	574,293 10	5,424,793 17
1895	2,829,005 74	2,472,540 41	508,203 22	4,081,340 44	793,834 91	63.601 20	46,915 95	698,215 59	5,683,908 09
1896	3,043,884 60	2,517,827 78	256,021 31	4,291,481 12	899.861 54	71,249 23	35,492 78	503,674 80	5,801,759 47
1897	2,943,310 10	2,677,945 07	156,638 37	4,418,544 67	899,726 74	68,719 53	18,885 63	441,871 03	5,847,747 60
1898	3,106,072 72	2,684,416 96	364,030 62	4,582,625 71	1,010,710 13	72,975 97	16,693 40	494,899 39	6,177,904 60
1899	3,076,472 40	2,690,705 16	172,053 24	4,562.994 54	1,025,473 62	‡88,341 06	------------	397,793 15	6,074,602 37
1900	3,567,763 56	2,861,409 16	296,345 64	4,850,804 22	994,727 41	‡81,749 79	------------	268,157 32	6,195,438 74
1901	3,485,126 45	2,888,046 10	93,171 60	4,685,144 20	1,080.040 37	‡82,995 12	------------	525,050 16	6,373,229 85
1902	3,584,001 45	3,076,699 73	99,687 86	4,748,472 75	1,329,359 68	‡88,923 05	------------	439,305 94	6,606,061 42
1903	3,590,390 40	3,887,778 68	699,758 22	5,665,431 02	1,461.838 79	‡105,016 92	------------	937,879 47	8,170,166 20
1904	3,926,972 18	4,644,967 95	1,299,565 92	6.027,850 53	1,500,815 22	‡138,439 04	------------	1,734,359 36	9,401,464 15
1905	4,234,241 02	4,580,258 78	1,961,805 35	6,460,879 67	1,675.564 94	‡133,457 82	------------	1,408,100 86	9,678,003 29
1906	3,880,740 82	3,681,439 68	1,603,236 84	7,003,176 86	1,805,867 52	‡148,351 94	------------	1,983,163 70	10,940,560 02
1907	‡4,300,379 23	7,394,551 55	593,194 87	7,422,575 41	2,011,921 54	163,996 70	------------	2,620,211 24	12,218,704 89
1908	4,497,337 81	8,899,459 82	630,502 51	8,720,931 65	2,307,417 49	164,413 82	------------	3,229,940 91	14,423,703 87
1909	4.761,954 30	11,993,868 62	436,490 96	9,325,688 76	2.472.519 54	186,428 37	------------	4,000,619 07	15,985,255 74
1910	5,101,950 89	13,308,417 90	415,887 54	10,233,858 10	2,926,957 70	233,163 59	------------	4,536,538 36	17,930,517 75
1911	5,682,117 16	13,833,191 32	623,852 21	11,381,661 72	3,777,912 90	252,923 02	------------	4,958,430 18	20,370,927 82
1912	6,110,857 30	19,423,138 34	507,038 56	12,687,314 29	3,831,017 88	243,136 22	------------	7,217,152 22	23,978,620 61
1913	5,773,467 02	27,749,637 40	526,294 63	14,603,061 71	4,833,792 73	289,151 89	------------	5,828,913 03	25,554,419 36
1914	6,073,096 14	20,560,162 99	464,868 39	16,314,791 25	4,622,736 78	310,089 72	------------	5,332,285 92	26,579,903 62
1915	6,170,971 30	25,523,371 66	6,203,654 10	17,067,504 16	5,919,066 53	299,152 61	------------	8,406,237 98	31,691,961 28
1916†	6,546,304 12	24,620,452 48	1,465,325 71	17,715,673 87	3,777,488 49	479,584 70	------------	8,153,908 63	30,126,651 69

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*Not reported.

‡Does not include balance on hand.

†There was a balance on hand of $7,829,181.73 at beginning of year that is not included in receipts. Balances are not included in year's receipts.

TABLE No. 24.

Miscellaneous Statistics, Showing County Expenses for Schools, Salary of County Superintendent and Deputies and Expenses of Office for Year 1916.

Counties	Annual salary, superintendent and deputies	Traveling expenses	Postage and expressage	Other expenses	Total
Alameda	$11,200 00	$660 00	$306 00	-------------	$12,166 00
Alpine	200 00	5 00	6 00	$2 00	213 00
Amador	1,500 00	159 60	84 00	-------------	1,743 60
Butte	2,720 00	352 56	125 00	604 53	3,802 09
Calaveras	1,500 00	114 30	67 78	81 00	1,763 08
Colusa	2,400 00	241 45	25 00	-------------	2,666 45
Contra Costa	4,450 00	-------------	163 00	-------------	4,613 00
Del Norte	720 00	30 25	20 00	-------------	770 25
El Dorado	1,800 00	192 75	120 07	-------------	2,112 82
Fresno	7,800 00	1,499 82	197 91	-------------	9,497 73
Glenn	2,700 00	400 00	97 00	20 00	3,217 00
Humboldt	3,400 00	404 50	126 50	206 35	4,137 35
Imperial	3,563 44	333 61	-------------	704 34	4,601 39
Inyo	1,500 00	100 00	50 00	75 00	1,725 00
Kern	7,200 00	33 91	190 51	554 48	7,978 90
Kings	2,400 00	85 00	90 00	154 25	2,729 25
Lake	1,000 00	64 35	40 00	37 35	1,141 70
Lassen	1,500 00	286 85	88 00	-------------	1,874 85
Los Angeles	23,760 00	419 42	905 00	1,847 30	26,931 72
Madera	2,300 00	204 55	76 11	-------------	2,580 66
Marin	3,600 00	314 45	99 00	-------------	4,013 45
Mariposa	600 00	238 70	66 00	59 99	964 69
Mendocino	2,400 00	892 30	157 75	200 00	3,650 05
Merced	3,179 71	316 65	146 00	-------------	3,642 36
Modoc	1,500 00	188 90	46 62	48 14	1,783 66
Mono	400 00	100 00	23 95	47 29	571 24
Monterey	3,447 00	731 30	200 00	1,159 34	5,537 64
Napa	2,500 00	334 90	116 00	719 78	3,670 68
Nevada	2,000 00	137 10	93 00	-------------	2,230 10
Orange	3,150 00	190 10	100 00	180 85	3,620 95
Placer	2,400 00	214 45	122 98	530 24	3,267 67
Plumas	800 00	199 30	60 00	-------------	1,059 30
Riverside	3,600 00	690 40	120 00	456 96	4,867 36
Sacramento	5,100 00	103 00	206 00	1,002 98	6,411 98
San Benito	1,800 00	295 75	76 00	-------------	2,171 75
San Bernardino	3,600 00	330 25	-------------	100 00	4,030 25
San Diego	7,100 28	705 78	294 96	1,207 97	9,308 99
San Francisco	23,260 00	540 00	-------------	-------------	23,800 00
San Joaquin	4,500 00	-------------	190 00	50 00	4,740 00
San Luis Obispo	2,400 00	410 05	123 00	203 06	3,136 11
San Mateo	2,100 00	265 25	84 00	-------------	2,449 25
Santa Barbara	3,080 00	359 05	140 00	174 62	3,753 67
Santa Clara	4,622 00	229 90	160 25	554 27	5,566 42
Santa Cruz	2,400 00	366 10	130 00	-------------	2,896 10
Shasta	2,400 00	493 55	222 00	-------------	3,115 55
Sierra	625 00	50 75	36 00	9 25	721 00
Siskiyou	2,000 00	500 00	185 00	703 36	3,388 36
Solano	3,300 00	181 25	72 00	558 63	4,111 88
Sonoma	3,500 00	288 75	170 00	-------------	3,958 75
Stanislaus	3,020 00	397 50	120 00	193 60	3,731 10
Sutter	1,600 00	82 00	70 00	-------------	1,752 00
Tehama	2,400 00	465 40	138 00	500 00	3,503 40
Trinity	1,000 00	80 25	52 00	98 96	1,231 21
Tulare	4,400 00	891 35	312 00	374 06	5,977 41
Tuolumne	1,000 00	101 50	70 00	-------------	1,171 50
Ventura	2,880 00	400 00	126 00	20 00	3,426 00
Yolo	1,800 00	157 45	39 10	198 85	2,195 40
Yuba	1,800 00	190 00	18 25	110 00	2,118 25
Totals	$204,877 43	$18,021 35	$7,163 74	$13,748 80	$243,811 32

TABLE No. 25.

Miscellaneous Statistics, Showing County Expenses for Schools and Expenses of Members of County Boards of Education, 1916.

Counties	Paid members, per diem	Amount paid for traveling expenses	Other expenses	Total expenses
Alameda	$2,715 00	------------	------------	$2,715 00
Alpine	25 00	$5 40	$15 60	46 00
Amador	888 00	37 75	------------	917 75
Butte	1,255 00	184 60	90 00	1,529 60
Calaveras	735 00	38 80	12 75	786 55
Colusa	1,350 00	123 65	------------	1,473 65
Contra Costa	1,195 00	238 40	907 25	2,340 65
Del Norte	425 00	------------	8 00	433 00
El Dorado	1,560 00	62 00	------------	1,622 00
Fresno	1,780 00	66 00	------------	1,846 00
Glenn	1,765 00	48 00	------------	1,813 00
Humboldt	755 00	115 20	68 20	938 40
Imperial	320 00	35 53	62 48	418 01
Inyo	110 00	78 00	25 80	213 80
Kern	1,443 00	8 70	427 75	1,879 45
Kings	1,225 00	------------	224 70	1,449 70
Lake	915 00	36 70	55 20	1,006 90
Lassen	835 00	125 20	------------	960 20
Los Angeles	1,600 00	86 80	439 82	2,126 62
Madera	650 00	44 50	------------	694 50
Marin	695 00	177 80	------------	872 80
Mariposa	690 00	18 00	34 00	742 00
Mendocino	1,476 50	230 20	60 00	1,766 70
Merced	1,265 00	285 60	------------	1,550 60
Modoc	380 00	90 50	------------	470 50
Mono	300 00	66 60	------------	366 60
Monterey	1,002 50	397 60	193 85	1,593 95
Napa	1,250 00	------------	------------	1,250 00
Nevada	615 00	99 20	------------	714 20
Orange	1,075 00	127 60	352 00	1,554 60
Placer	285 00	177 80	------------	462 80
Plumas	835 00	205 00	------------	1,040 00
Riverside	935 00	445 60	161 95	1,542 55
Sacramento	2,755 00	91 20	------------	2,846 20
San Benito	750 00	74 00	------------	824 00
San Bernardino	560 00	50 40	50 00	660 40
San Diego	780 00	------------	172 45	952 45
San Francisco	------------	------------	------------	------------
San Joaquin	1,375 00	235 50	75 00	1,685 50
San Luis Obispo	1,245 00	15 20	182 54	1,442 74
San Mateo	925 00	178 50	------------	1,103 50
Santa Barbara	895 00	355 40	104 00	1,354 40
Santa Clara	2,165 00	238 45	351 83	2,755 28
Santa Cruz	1,190 00	201 00	------------	1,391 00
Shasta	820 00	59 25	------------	879 25
Sierra	225 00	88 40	25 00	338 40
Siskiyou	1,655 00	970 00	568 35	3,193 35
Solano	885 00	134 10	267 80	1,286 90
Sonoma	990 00	176 40	105 00	1,271 40
Stanislaus	765 00	61 70	120 19	946 89
Sutter	1,050 00	60 20	------------	1,110 20
Tehama	535 00	137 40	500 00	1,172 40
Trinity	325 00	103 80	------------	428 80
Tulare	878 43	156 05	119 05	1,153 53
Tuolumne	887 60	40 00	198 95	1,126 55
Ventura	825 00	151 20	------------	976 20
Yolo	879 50	108 00	201 95	1,189 45
Yuba	1,750 00	252 00	------------	2,002 00
Totals	$57,452 53	$7,594 88	$6,181 46	$71,228 87

TABLE No. 26.

Miscellaneous Statistics, Showing City Expenses for Schools, Expenses of Offices of City Superintendents and Boards of Education, 1916.

Counties	Total annual salary paid	Total traveling expenses	Other expenses	Total
Alameda	$64,300 00	$1,946 80	$843 48	$67,090 28
Alpine				
Amador				
Butte	5,050 00		200 00	5,250 00
Calaveras				
Colusa				
Contra Costa	4,300 00			4,300 00
Del Norte				
El Dorado				
Fresno	7,940 00			7,940 00
Glenn	3,220 00			3,220 00
Humboldt				
Imperial	4,620 00			4,620 00
Inyo				
Kern				
Kings				
Lake				
Lassen				
Los Angeles	50,425 38	707 99	6,424 05	57,557 42
Madera				
Marin	3,000 00			3,000 00
Mariposa				
Mendocino				
Merced				
Modoc				
Mono				
Monterey	1,000 00		25 00	1,025 00
Napa				
Nevada	4,100 00	48 05		4,148 05
Orange	4,576 00	1 00	75 00	4,652 00
Placer				
Plumas				
Riverside	3,180 00			3,180 00
Sacramento	6,484 17	23 55	1,217 83	7,725 55
San Benito				
San Bernardino	2,400 00	315 00	1,400 00	4,115 00
San Diego	13,960 00	360 00		14,320 00
San Francisco	21,900 00	1,500 00	16,616 00	40,016 00
San Joaquin	9,600 00			9,600 00
San Luis Obispo	2,500 00		29 50	2,529 50
San Mateo				
Santa Babrara	3,000 00			3,000 00
Santa Clara	5,200 00		50 00	5,250 00
Santa Cruz	3,180 00		142 53	3,322 53
Shasta				
Sierra				
Siskiyou				
Solano	3,180 00	59 06	135 48	3,374 54
Sonoma	2,750 00			2,750 00
Stanislaus	2,700 00	11 68		2,711 68
Sutter				
Tehama				
Trinity				
Tulare				
Tuolumne				
Ventura	2,000 00		10 00	2,010 00
Yolo	600 00			600 00
Yuba				
Totals	$235,165 55	$4,973 13	$27,168 87	$267,307 55

TABLE No. 26a.

Expenses of Office of Superintendent of Public Instruction and State Board of Education for Year 1915-1916.

July 1, 1914, to June 30, 1915—	
Traveling expenses and contingent office expenses	$1,124 93
Postage, telegraph and express	1,007 97
Salary, Superintendent of Public Instruction	5,000 00
Salary, office force	9,380 00
	$16,512 90

July 1, 1915, to June 30, 1916—	
Traveling expenses and contingent office expenses	$1,829 32
Postage, telegraph and express	1,195 59
Salary, Superintendent of Public Instruction	5,000 00
Salary, office force	9,560 00
	$17,584 91

July 1, 1914, to June 30, 1915—	
Cost of life diplomas*	$856 40
Cost of high school credentials*	209 25
Per diems, members of state board	3,345 00
Traveling expenses, members of state board	2,125 44
Traveling expenses, commissioners	1,709 61
Salaries, clerical assistants	2,707 42
Postage	1,170 00
Express	47 12
Telephones	112 12
Telegraph	89 07
Office fittings	1,212 78
Miscellaneous	232 36
Salary, three commissioners at $4,000 each	12,000 00
	$25,816 57

Expenses of State Board of Education.

July 1, 1915, to June 30, 1916—	
Cost of life diplomas*	$941 60
Cost of high school credentials*	163 50
Per diem, members of state board	3,900 00
Traveling expenses, members of state board	2,316 35
Traveling expenses, commissioners	2,222 50
Salaries, clerical assistants	5,694 81
Postage	1,250 60
Express	45 12
Publicity	85 67
Freight	16 11
Rent of Los Angeles office	64 12
Stationery, from purchasing agent	151 70
Printing	1,579 78
Telegraph	111 73
Telephone	245 90
Office fittings	562 73
Miscellaneous	295 72
Salary, commissioners, at $4,000 each	12,000 00
	$31,647 94

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*Paid in by the applicants in form of $2 fees.

STATE NORMAL SCHOOLS.

TABLE NO. 27. Number of Teachers, Students Enrolled, Receipts and Expenditures, Valuation of Property, Number of Volumes in Libraries, Number of Graduates.

TABLE NO. 28. Receipts and Expenditures by Schools for years Closing June 30, 1915 and 1916. Expenditures, 1915 and 1916.

TABLE NO. 29. Valuation of All Normal Property; Number of Acres to Normal Grounds, and Number of Books in Normal School Libraries.

TABLE NO. 30. Number of Graduates—Boys and Girls—1915 and 1916, and Total Graduates of Each School Since Establishment.

TABLE No. 27.

Statistics of State Normal Schools, Showing Teachers Employed.

Name and location of school	Men		Women		Total	
	1915	1916	1915	1916	1915	1916
Chico	9	9	12	11	21	20
Fresno	10	9	16	10	26	19
Humboldt	5	6	4	9	9	15
Los Angeles	17	20	69	69	86	89
San Diego	7	6	21	17	28	23
San Francisco	6	7	21	26	27	33
San Jose	11	11	39	46	50	57
Santa Barbara	4	7	16	21	20	28
Totals	69	75	198	209	267	284

Pupils Enrolled—Normal Department.

Name and location of school	Boys		Girls		Total	
	1915	1916	1915	1916	1915	1916
Chico	51	71	271	318	322	389
Fresno	15	15	273	328	288	343
Humboldt	40	35	119	176	159	211
Los Angeles	67	100	1,741	1,682	1,808	1,782
San Diego	8	12	331	345	339	357
San Francisco	--------	5	494	584	494	589
San Jose	54	60	892	948	946	1,008
Santa Barbara	60	84	210	234	270	318
Totals	295	382	4,331	4,615	4,626	4,997

Training School.

Name and location of school	Boys		Girls		Total	
	1915	1916	1915	1916	1915	1916
Chico	189	206	233	223	422	429
Fresno	155	196	129	183	284	379
Humboldt	29	30	20	21	49	51
Los Angeles	236	218	292	215	528	433
San Diego	163	180	224	245	387	425
San Francisco	374	372	309	340	683	712
San Jose	389	381	421	443	810	824
Santa Barbara†	--------	--------	--------	--------	--------	--------
Totals	1,535	1,583	1,628	1,670	3,163	3,253

†No training school. Use city schools.

TABLE No. 28.

Statistics of State Normal Schools, Showing Receipts and Expenditures for Years Closing June 30, 1915 and 1916.

Receipts, 1915 and 1916.

Name of school	Balance on hand June 30	Receipts from— State appropriation	Receipts from— Tuition and other sources	Miscellaneous sources	Total receipts
1915.					
Chico	$14,170 63	$49,600 00	$5,203 93	-------------	$68,974 56
Fresno	10,459 09	414,909 65	1,959 32	-------------	427,328 06
Humboldt	7,320 15	-------------	6,781 29	-------------	14,101 44
Los Angeles	10,722 97	195,500 00	353 29	-------------	206,576 26
San Diego	3,757 80	53,350 00	2,627 09	-------------	59,734 89
San Francisco	8,228 47	45,850 00	10,834 67	-------------	64,913 14
San Jose	109,987 20	-------------	-------------	-------------	109,987 20
Santa Barbara	3,690 63	31,500 00	8,702 80	-------------	43,893 43
Totals	$168,336 94	$790,709 65	$36,462 39	-------------	$995,508 98
1916.					
Chico	$6,962 90	$73,705 00	$440 00	$952 59	$82,060 49
Fresno	5,269 12	362,335 00	1,780 75	121 45	369,506 32
Humboldt	3 77	55,642 50	-------------	248 21	55,894 48
Los Angeles	4,319 18	216,250 00	-------------	1,418 33	221,987 51
San Diego	190 29	86,910 00	61 50	1,449 27	88,611 06
San Francisco	3,736 05	88,850 00	25 00	6,166 74	98,777 79
San Jose	10,941 65	159,250 00	-------------	-------------	170,191 65
Santa Barbara	1,184 10	66,100 00	6,746 94	-------------	74,031 04
Totals	$32,607 06	$1,109,042 50	$9,054 19	$10,356 59	$1,161,060 34

Expenditures, 1915 and 1916.

Name of school	Amount paid teachers for salaries	Amount paid janitors, laborers and supplies	Amount paid for sites, buildings and furniture	Amount paid for books and apparatus	Total expenditure	Balance on hand June 30
1915.						
Chico	$35,640 75	$12,321 68	$7,281 15	$1,322 03	$56,565 61	$12,408 95
Fresno	32,638 99	6,156 23	43,693 03	1,245 93	83,734 18	343,593 88
Humboldt	10,542 02	3,275 57	212 64	43 41	14,073 64	27 80
Los Angeles	121,403 89	23,034 24	52,562 45	3,378 22	200,378 80	6,197 46
San Diego	43,061 98	12,482 98	1,445 46	1,061 05	58,051 47	1,683 42
San Francisco	36,399 96	23,710 83	207 65	882 23	61,200 67	3,712 47
San Jose	78,870 29	9,696 78	7,704 24	2,348 38	98,619 69	11,367 51
Santa Barbara	25,628 00	16,774 71	-------------	306 62	42,709 33	1,184 10
Totals	$384,185 88	$107,453 02	$113,106 62	$10,587 87	$615,333 39	$380,175 59
1916.						
Chico	$34,827 50	$12,594 19	$9,889 79	$1,046 18	$58,357 66	$23,702 83
Fresno	47,943 79	5,348 88	142,192 45	989 18	196,474 30	173,032 02
Humboldt	23,267 03	5,259 52	20,017 65	1,095 91	49,640 11	6,254 37
Los Angeles	162,675 58	45,734 04	-------------	3,126 61	211,536 23	10,451 28
San Diego	47,225 35	13,906 29	19,807 71	1,266 15	82,205 50	6,405 56
San Francisco	45,278 37	18,330 91	16,708 57	871 63	81,189 48	17,588 31
San Jose	101,381 18	9,315 03	36,102 97	2,687 01	149,486 19	20,705 46
Santa Barbara	26,328 05	13,050 50	23,091 00	285 85	62,755 40	11,275 64
Totals	$488,926 85	$123,539 36	$267,810 14	$11,368 52	$891,644 87	$269,415 47

TABLE No. 29.

Statistics of State Normal Schools, Showing Valuation of Property for Years Closing June 30, 1915 and 1916.

Name of school	Area of grounds, acres	Grounds	Buildings	Furniture	Library books	Apparatus	Supplies on hand	Total valuation
1915.								
Chico	11	$75,000	$230,029	$13,933	$18,422	$10,842	--------	$348,226
Fresno	25	37,000	11,000	4,735	1,806	2,939	--------	57,480
Humboldt	50.5	10,000	3,291	2,641	301	---------	--------	16,233
Los Angeles	25	110,000	600,000	----------	150,000	---------	--------	860,000
San Diego	16.5	100,000	233,250	15,500	11,500	8,260	--------	368,510
San Francisco	.17	120,000	103,000	14,500	7,500	15,000	--------	260,000
San Jose	18.3	100,000	455,000	40,000	20,000	10,000	--------	625,000
Santa Barbara	14	21,000	109,000	23,840	2,900	3,960	--------	160,700
Totals	159.47	$573,000	$1,744,570	$115,149	$212,429	$51,001	--------	$2,696,149
1916.								
Chico	11	$75,000	$231,000	$14,138	$18,919	$10,273	$1,470	$350,800
Fresno	25	37,000	370,000	3,500	5,000	6,000	500	422,000
Humboldt	51	51,000	14,730	5,641	1,450	---------	15	72,836
Los Angeles	25	110,000	587,048	83,872	29,235	---------	2,543	812,698
San Diego	16.5	100,000	210,156	23,482	13,563	6,192	250	353,643
San Francisco	.17	120,000	120,000	20,500	8,500	2,700	8,500	280,200
San Jose	18.3	50,000	463,150	45,000	25,000	10,000	200	593,350
Santa Barbara	14	27,500	120,500	31,240	3,200	3,960	500	186,900
Totals	160.97	$570,500	$2,116,584	$227,373	$104,867	$39,125	$3,978	$3,072,427

Statistics of Normal Schools, Showing Number of Books in Normal School Libraries.

Name of school	1915				1916			
	On hand beginning of year	Bought or donated	Lost or destroyed	Total at close of year	On hand beginning of year	Bought or donated during year	Lost or destroyed during year	Total at close of year
Chico	18,406	1,619	863	19,162	19,162	1,750	410	20,502
Fresno	1,120	580	3	1,697	1,665	1,210	---------	2,875
Humboldt	1,029	382	18	1,393	667	1,394	4	2,057
Los Angeles	24,638	1,625	258	26,005	26,006	1,712	3,064	24,654
San Diego	13,574	---------	---------	14,702	14,702	1,532	631	15,603
San Francisco	14,987	1,812	715	16,084	16,084	1,794	464	17,414
San Jose	14,346	1,231	---------	15,577	15,577	1,264	130	16,711
Santa Barbara	3,294	161	3	3,452	3,452	223	4	3,671
Totals	91,394	8,538	1,860	98,072	97,315	10,879	4,707	103,487

TABLE No. 30.

Statistics of State Normal Schools, Showing the Number of Graduates From Each School for the Years Closing June 30, 1915, and June 30, 1916, and the Total Since Organization.

Name of school	Number of graduates		Grand total since organization
	1915	1916	
Chico—			
Boys	11	15	212
Girls	93	92	1,258
Totals	104	107	1,470
Fresno—			
Boys	8	1	27
Girls	81	110	411
Totals	89	111	438
Humboldt—			
Boys	--------	5	5
Girls	14	37	52
Totals	14	42	57
Los Angeles—			
Boys	22	28	299
Girls	695	545	5,000
Totals	717	573	5,299
San Diego—			
Boys	2	4	52
Girls	140	127	1,151
Totals	142	131	1,203
San Francisco—			
Boys	--------	--------	--------
Girls	181	188	13,095
Totals	181	188	13,095
San Jose—			
Boys	18	17	521
Girls	379	330	6,344
Total	397	347	6,865
Santa Barbara—			
Boys	34	23	56
Girls	156	86	351
Totals	190	109	407
Grand totals—			
Boys	95	93	1,172
Girls	1,739	1,515	15,962
Totals	1,834	1,608	17,134

CALIFORNIA POLYTECHNIC SCHOOL.

TABLE No. 31. Number of Teachers, Number of Graduates, Receipts and Expenditures, Valuation of Property.

TABLE No. 31.

Statistics of California Polytechnic School, at San Luis Obispo, for 1915 and 1916.

By R. W. RYDER, Director.

	1915	1916
Number of teachers employed:		
Men	11	12
Women	4	5
Totals	15	17
Students enrolled, 1914–1915:		
First year ---- men ---- 42; women ---- 14		
Second year ---- men ---- 33; women ---- 18		
Third year ---- men ---- 20; women ---- 9		
Specials ---- men ---- 25; women ---- 1		
Totals ---- men ---- 120; women ---- 42	162	
Graduates ---- men ---- 17; women ---- 5	22	
Students enrolled, 1915–1916:		
First year ---- men ---- 55; women ---- 16		
Second year ---- men ---- 38; women ---- 19		
Third year ---- men ---- 24; women ---- 11		
Fourth year ---- men ---- --; women ---- --		
Specials ---- men ---- 11; women ---- 2		
Extension specials ---- men ---- 699; women ---- 61		
Totals ---- men ---- 827; women ---- 109		936
No graduating class (end of three-year course).		

FINANCIAL STATEMENT, 1915 AND 1916.

	1915	1916
Salaries—		
Appropriation	----------	$35,000 00
Balance	$38,140 63	----------
Administration	5,076 83	6,537 88
Faculty	28,673 80	28,574 60
Employees	4,390 00	2,381 66
Balance	2,950 66	35 86
Grounds—		
Appropriation	----------	3,500 00
Balance	3,751 15	----------
Expended	3,596 57	3,462 94
Balance	154 58	37 06
Library—		
Appropriation	----------	850 00
Balance	903 75	----------
Expended	668 30	738 16
Balance	235 45	111 84
Printing—		
Appropriation	----------	750 00
Balance	931 63	----------
Expended	892 85	750 00
Balance	38 78	----------
Support—		
Appropriation	----------	15,500 00
Balance	15,512 60	----------
Expended	14,565 76	15,040 31
Balance	948 22	459 63

FINANCIAL STATEMENT, 1915 AND 1916—Continued.

	1915	1916
Contingent fund—		
Balance	$6,262 17	$7,225 80
Receipts:		
Dining hall and dormitory	9,011 15	7,286 88
Creamery, dairy, animal industry and farm	14,326 70	15,785 41
Expended	22,374 22	27,173 02
Balance	7,225 80	3,125 07
Special appropriations—		
Equipment, Chapter 291, 1915		4,000 00
Expenditure		3,923 86
Balance		76 14
Furniture, Chapter 512, 1911:		
Balance	803 45	
Expenditure	803 45	

Biennial Valuation of Property.

Area of ground, acres	311.04
Value of grounds, shrubs, orchards, roads, water, sewer and heating systems	$272,909 00
Value of buildings	186,100 00
Value of furniture	11,000 00
Value of apparatus	68,000 00
Value of stock and tools	17,400 00
Value of library	3,252 25
Total	$558,661 25

Recapitulation.

Total receipts	$89,643 93	$89,898 09
Total expenditures	81,041 78	88,582 43
Unexpended balance	$8,601 45	$1,315 66
Total value of property		$558,661 25
Total books in library	3,500	3,600

INSTITUTION FOR THE DEAF AND THE BLIND.

TABLE NO. 32. Enrollment, Number of Teachers, Receipts and Expenditures and Valuation of Property.

TABLE No. 32.

Showing Statistics California Institution for the Deaf and the Blind.

BERKELEY, CAL., *July 24, 1916.*

L. E. MILLIGAN, Principal.

The enrollment of pupils for the two years ending June 30, 1916, has been as follows:

	1914-15		1915-16	
Deaf boys	117		110	
Deaf girls	75		69	
		192		179
Blind boys	51		54	
Blind girls	43		43	
		94		97
Total enrollment, both classes		286		276

The number of teachers, including manual craft instructors, has been:

	1914-15		1915-16	
Deaf department—				
Teachers, men	11		10	
Teachers, women	12		14	
		23		24
Blind department—				
Teachers, men	4		6	
Teachers, women	9		9	
		13		15
Totals, both departments		36		39

Receipts for the Year Ending June 30, 1915.

Salaries and wages, balance July 1, 1914	$802 13	
Salaries and wages, appropriation	65,000 00	
		$65,802 13
Support, balance July 1, 1914	$355 13	
Support, appropriation	30,000 00	
		30,355 13
Total		$96,157 26

Disbursements for the Year Ending June 30, 1915.

Salaries and wages	$65,799 21	
Support	30,350 32	
		96,149 53
Balance in treasury, June 30, 1915		$7 73

Contingent Fund for the Year Ending June 30, 1915.

Balance on hand July 1, 1914	$2,916 53	
Receipts	6,563 33	
		$9,479 86
Disbursements		7,124 22
Balance in treasury, June 30, 1915		$2,355 64

Receipts for the Year Ending June 30, 1916.

Salaries and wages, appropriation	$70,000 00	
Support, appropriation	37,500 00	
Total		$107,500 00

Disbursements for the Year Ending June 30, 1916.

Salaries and wages	$69,109 15	
Support	34,318 74	
		103,427 89
Balance in treasury, June 30, 1916		$4,072 11

Contingent Fund for the Year Ending June 30, 1916.

Balance on hand July 1, 1915	$2,355 64	
Receipts	6,012 90	
Total		$8.368 54
Disbursements		6,838 46
Balance in treasury, June 30, 1916		$1,530 08

Valuation of Property Belonging to the California School for the Deaf and the Blind.

Land, 130 acres	$650.000 00
Buildings	527,500 00
Water	27.000 00
Equipment	67,335 77
	$1,271,835 77

Gifts and Bequests, June 30, 1916.

Loans	$64,800 00
Cash	6,445 79
Total	$1,343,081 56

Recapitulation.

	1915	1916
1. Number of teachers employed	36	39
2. Number of students enrolled	286	276
3. Receipts	$105,637 12	$115,868 54
4. Expenditures	$103,273 75	$110,266 35
5. Total valuation	$1,274,984 53	$1,343,081 56
6. Number of Braille books	800	1,500
7. Number of ink books	3,000	4,800
8. Number of graduates	19	21

UNIVERSITY OF CALIFORNIA.

TABLE NO. 33. Number of Teachers, Students, Receipts and Expenditures, Valuation of Property, Number of Books in Library, and Number of Graduates.

TABLE No. 33.

Statistics of the University of California, Showing Number of Professors, Teachers and Students, 1914–15, 1915–16.

By JAMES SUTTON, Recorder of the Faculties.

NUMBER OF PROFESSORS, LECTURERS AND INSTRUCTORS IN THE UNIVERSITY OF CALIFORNIA.

1914-15.		1915-16.	
Men	386	Men	412
Women	25	Women	21
Total	411	Total	433

ENROLLMENT OF STUDENTS.

Number of students enrolled in the—	1914-15			1915-16		
	Graduate students	Under-graduate students	Total	Graduate students	Under-graduate students	Total
College of Letters and Science:						
Men	285	1,400		325	1,408	
Women	407	2,001		499	2,223	
Totals	692	3,401	4,093	824	3,631	4,455
College of Engineering and Chemistry:						
Men	45	766		44	736	
Women	--------	5		1	4	
Totals	45	771	816	45	740	785
College of Commerce:						
Men	9	298		7	310	
Women	--------	13		1	30	
Totals	9	311	320	8	340	348
College of Agriculture: Full courses—						
Men	43	532		65	537	
Women	4	21		10	28	
Totals	47	553	600	75	565	640
College of Agriculture: Short course—						
Men	--------	171		--------	166	
Women	--------	15		--------	15	
Totals	--------	186	186	--------	181	181
School of Jurisprudence:*						
Men	67	--------		86	--------	
Women	4	--------		8	--------	
Totals	71	--------	71	94	--------	94
School of Architecture:*						
Men	14	--------		6	--------	
Women	4	--------		1	--------	
Totals	18	--------	18	7	--------	7
Medical School: In Berkeley—						
Men	23	42		27	31	
Women	7	7		6	5	
Totals	30	49	79	33	36	69
In San Francisco—						
Men	37	--------		49	--------	
Women	6	--------		9	--------	
Totals	43	--------	43	58	--------	58
In Los Angeles—						
Men	--------	--------		27	--------	
Women	--------	--------		1	--------	
Totals	--------	--------		28	--------	28

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*Undergraduate students taking work in the Schools of Jurisprudence and Architecture are registered also in the College of Letters and Science and have been included in the figures given above for that college

Number of students enrolled in the—	1914-15			1915-16		
	Graduate students	Under-graduate students	Total	Graduate students	Under-graduate students	Total
College of Dentistry:						
Men	--------	109		--------	138	
Women	--------	2		--------	1	
Totals	--------	111	111	--------	139	139
College of Pharmacy:						
Men	--------	91		--------	91	
Women	--------	4		--------	6	
Totals	--------	95	95	--------	97	97
Hastings College of the Law:						
Men	--------	71		--------	76	
Women	--------	2		--------	--------	
Totals	--------	73	73	--------	76	76
San Francisco Institute of Art:						
Men	--------	103		--------	160	
Women	--------	138		--------	249	
Totals	--------	241	241	--------	409	409
Grand totals	--------	--------	6,746	--------	--------	7,386

SUMMER SESSIONS.

	1914	1915
Men	982	1,488
Women	2,197	3,876
Totals	3,179	5,364
Total number of students, deducting duplicate registrations	9,153	11,757

GRADUATED DURING THE YEAR.

	1914	1915
Men	597	663
Women	375	417
Totals	972	1,080

Total number of graduates since the establishment of the University, 13,378.

SUMMARY OF ADDITIONAL ENROLLMENT FIGURES.*

	1914	1915
Wilmerding School of Industrial Arts	191	446
University Farm School	267	314
University Extension:		
Class Bureau	1,095	903
Correspondence courses	1,893	2,060
University Extension in Agriculture:		
Farm home demonstrations	†	3,720
Correspondence courses	11,599	24,306
Lectures by staff of Citrus Experiment Station	3,633	13,988
Various other lectures	17,377	18,727
Farmers' Institutes	10,425	5,108

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†Not given.

*Departments in which the work of instruction is, in general, conducted without reference to the satisfaction of requirements for the University degrees.

INCOME AND EXPENDITURES.

From July 1, 1914, to June 30, 1915.

INCOME.

United States appropriations	$90,000 00	
State appropriations	1,685,387 71	
Students' fees	252,183 25	
Clinics of hospitals and infirmary	53,075 43	
Departmental sales, etc., receipts	199,273 19	
Kearney Vineyard income	40,000 00	
Income from investments	236,854 68	
Gifts:		
For current use	70,388 39	
For buildings and improvements	9,249 92	
For endowments	147,611 71	
Total income		$2,784,024 28

EXPENDITURES.

Administration and operation	$354,341 97	
Buildings and improvements	438,575 86	
Education and research	1,689,402 59	
Disbursements from class funds, scholarships, fellowships and prizes	32,653 17	
Departmental sales, etc., expenditures	187,561 12	
Interest paid to endowment pool, etc.	25,082 13	
Total expenditures		$2,727,616 84

ASSETS, JUNE 30, 1915.

Real estate in Berkeley	$1,498,767 23
Buildings and improvements in Berkeley	3,621,902 81
Real estate and improvements not in Berkeley	3,178,927 60
Equipment	2,535,554 66
	$10,835,152 30

INCOME AND EXPENDITURES.

Year Ending June 30, 1916.

INCOME.

United States appropriations	$101,037 45	
State appropriations	1,934,482 99	
Students' fees	257,160 95	
Clinics of hospitals and infirmary	71,015 97	
Departmental sales, etc., receipts	189,729 04	
Kearney Vineyard income	40,000 00	
Income from investments	241,242 35	
Gifts:		
For current use	90,193 97	
For buildings and improvements	471,065 47	
For endowments	96,085 52	
Total income		$3,492,013 71

EXPENDITURES.

Administration and operation	$369,188 84	
Buildings and improvements	782,518 43	
Education and research	1,852,521 03	
Disbursements from class funds, scholarships, fellowships and prizes	43,992 07	
Departmental sales, etc., expenditures	178,008 07	
Interest paid to endowment pool, etc.	19,844 75	
Total expenditures		$3,246,073 19

ASSETS, JUNE 30, 1916.

Real estate in Berkeley	$1,545,822 44
Buildings and improvements in Berkeley	4,052,627 00
Real estate and improvements not in Berkeley	3,540,192 74
Equipment	2,622,358 34
	$11,761,000 52

BOOKS IN UNIVERSITY LIBRARY.

1914-15.		1915-16.	
At beginning of year	281,742	At beginning of year	304,666
Bought or donated	23,038	Bought or donated	28,396
Lost or destroyed	114	Lost or destroyed	178
Total at close of year	304,666	Total at close of year	332,884

STATE TEXTBOOKS.

TABLE NO. 33a. Number of Textbooks Sold, and Amount of Money Secured as the Result of Such Sales; Number of Books Distributed Free, Cost of Free Textbooks and Distribution; General Review of Textbooks, Sales, etc.

TABLE No. 33a.

Number of Textbooks Sold to Dealers, Orphan Asylums, Private Schools and Individuals from July 1, 1914, to June 30, 1915, Cost Per Book of Manufacture, Amount of Money Paid Into State Treasury from Sale of Books, etc.

Books	Number of books	Cost of manufacture	To school book fund	Royalty	To royalty fund	Price	Amount of sales
Primer	2,770	$0.102	$282 54	$0.048	$132 96	15 cents	$415 50
First Reader	2,440	.102	248 89	.048	117 11	15 cents	366 00
Second Reader	2,320	.1275	295 82	.0525	121 78	18 cents	417 60
Third Reader	1,629	.13	211 77	.06	97 74	19 cents	309 51
Fourth Reader	1,127	.15	169 05	.09	101 43	24 cents	270 48
Fifth Reader	709	.15	106 35	.09	63 81	24 cents	170 16
Speller—Book I	3,680	.115	423 22	.025	91 98	14 cents	515 20
Speller—Book II	1,918	.115	220 59	.025	47 93	14 cents	268 52
First Book in Arithmetic	2,759	.1275	351 75	.0525	144 87	18 cents	496 62
Advanced School Arithmetic	1,549	.14	216 86	.09	139 41	23 cents	356 27
English Lessons—Book I	1,942	.1625	315 60	.0675	131 06	23 cents	446 66
English Lessons—Book II	1,654	.17	281 18	.09	148 86	26 cents	430 04
Introductory History	899	.16	143 84	.15	134 85	31 cents	278 69
Brief School History	1,119	.26	290 94	.15	167 85	41 cents	458 79
Introductory Geography	1,430	.23	328 90	.09	128 70	32 cents	457 60
Advanced Geography	967	.39	377 13	.15	145 05	54 cents	522 18
Primer of Hygiene	657	.12	78 84	.06	39 42	18 cents	118 26
Civics	604	.185	111 74	.125	75 50	31 cents	187 24
Writing—Book I	1,409	.03	42 27	.01	14 09	4 cents	56 36
Writing—Book II	1,250	.03	37 50	.01	12 50	4 cents	50 00
Writing—Book III	1,144	.03	34 32	.01	11 44	4 cents	45 76
Writing—Book IV	945	.03	28 35	.01	9 45	4 cents	37 80
Writing—Book V	1,036	.03	31 08	.01	10 36	4 cents	41 44
Totals	35,957		$4,628 53		$2,088 15		$6,716 68

TABLE No. 33a—Continued.

Number of Textbooks Sold to Dealers, Orphan Asylums, Private Schools and Individuals from July 1, 1915, to June 30, 1916, Cost Per Book of Manufacture, Amount of Money Paid Into State Treasury from Sale of Books, etc.

Books	Number of books	Cost of manufacture	To school book fund	Royalty	To royalty fund	Price	Amount of sales
Primer	2,520	$0.102	$257 03	$0.048	$120 97	15 cents	$378 00
First Reader	2,418	.102	246 65	.048	116 05	15 cents	362 70
Second Reader	2,334	.1275	297 58	.0525	122 54	18 cents	420 12
Third Reader	1,592	.13	206 96	.06	95 52	19 cents	302 48
Fourth Reader	928	.15	139 20	.09	83 52	24 cents	222 72
Fifth Reader	609	.15	91 35	.09	54 81	24 cents	146 16
Speller—Book I	3,473	.115	399 40	.025	86 82	14 cents	486 22
Speller—Book II	1,398	.115	160 76	.025	34 96	14 cents	195 72
First Book in Arithmetic	2,292	.1275	292 24	.0525	120 32	18 cents	412 56
Advanced School Arithmetic	1,364	.14	190 96	.09	122 76	23 cents	313 72
English Lessons—Book I	1,341	.1625	217 90	.0675	90 53	23 cents	308 43
English Lessons—Book II	1,172	.17	199 24	.09	105 48	26 cents	304 72
Introductory History	922	.16	147 52	.15	138 30	31 cents	285 82
Brief School History	1,136	.26	295 36	.15	170 40	41 cents	465 76
Introductory Geography	1,565	.23	359 95	.09	140 85	32 cents	500 80
Advanced Geography	1,202	.39	468 78	.15	180 30	54 cents	649 08
Primer of Hygiene	765	.12	91 80	.06	45 90	18 cents	137 70
Civics	741	.185	137 09	.125	92 62	31 cents	229 71
Writing—Book I	1,284	.03	38 52	.01	12 84	4 cents	51 36
Writing—Book II	1,199	.03	35 97	.01	11 99	4 cents	47 96
Writing—Book III	810	.03	24 30	.01	8 10	4 cents	32 40
Writing—Book IV	725	.03	21 75	.01	7 25	4 cents	29 00
Writing—Book V	367	.03	11 01	.01	3 67	4 cents	14 68
Fourth Reader (old)	70	---------	---------	.12	8 40	12 cents	8 40
English Lessons—Book I (old)	21	---------	---------	.08	1 68	8 cents	1 68
English Lessons—Book II (old)	518	---------	---------	.12	62 16	12 cents	62 16
Totals	32,766		$4,331 32		$2,038 74		$6,370 06

TABLE No. 33a—Continued.

Number of Books Distributed Free to the Elementary Schools of the State from July 1, 1914, to June 30, 1915, and the Amount of Royalty Paid for the Use of Plates Belonging to the Textbooks Companies.

Books	Number of books	Royalty	To royalty fund
Primer	12,380	$0.048	$594 23
First Reader	10,511	.048	504 54
Second Reader	11,716	.0525	615 09
Third Reader	10,573	.06	634 38
Fourth Reader	10,356	.09	932 04
Fifth Reader	8,547	.09	769 23
Speller—Book I	33,107	.025	827 66
Speller—Book II	20,484	.025	512 10
First Book in Arithmetic	28,298	.0525	1,485 64
Advanced School Arithmetic	22,843	.09	2,055 87
English Lessons—Book I	17,209	.0675	1,161 60
English Lessons—Book II	17,136	.09	1,542 24
Introductory History	11,035	.15	1,655 25
Brief School History	17,773	.15	2,665 95
Introductory Geography	33,636	.09	3,027 24
Advanced Geography	35,919	.15	5,387 85
Primer of Hygiene	12,565	.06	753 90
Civics	10,306	.125	1,288 26
Writing—Book I	35,582	.01	355 82
Writing—Book II	33,530	.01	335 30
Writing—Book III	36,228	.01	362 28
Writing—Book IV	31,313	.01	313 13
Writing—Book V	32,112	.01	321 12
Totals	493,159		$28,100 72

TABLE No. 33a—Continued.

Number of Textbooks Distributed Free to the Elementary Schools of the State, Cost Per Copy of Royalty for Use of Plates and the Amount Paid on Royalty for Use of Plates, from July 1, 1915, to June 30, 1916.

Books	Number of books	Royalty	To royalty fund
Primer	14,649	$0.048	$703 14
First Reader	12,678	.048	608 54
Second Reader	15,030	.0525	789 07
Third Reader	10,893	.06	653 58
Fourth Reader	10,141	.09	912 69
Fifth Reader	10,082	.09	907 38
Speller—Book I	28,312	.025	707 80
Speller—Book II	19,048	.025	476 19
First Book in Arithmetic	26,933	.0525	1,413 99
Advanced School Arithmetic	22,562	.09	2,030 58
English Lessons—Book I	14,756	.0675	996 02
English Lessons—Book II	15,706	.09	1,413 54
Introductory History	9,926	.15	1,488 90
Brief School History	15,660	.15	2,349 00
Introductory Geography	19,689	.09	1,772 01
Advanced Geography	22,708	.15	3,406 20
Primer of Hygiene	11,220	.06	673 20
Civics	8,981	.125	1,122 62
Writing—Book I	41,369	.01	413 69
Writing—Book II	40,647	.01	406 47
Writing—Book III	43,399	.01	433 99
Writing—Book IV	40,396	.01	403 96
Writing—Book V	37,185	.01	371 85
Totals	491,970		$24,454 41

TABLE No. 33a—Continued.

Approximate Cost of Manufacturing and Distributing Textbooks by Months.

1914.		1915.	
July	$1,167 42	July	$957 22
August	7,489 01	August	5,117 24
September	523 44	September	337 11
October	5,867 80	October	319 86
November	2,239 73	November	175 96
December	19,836 35	December	158 66
1915.		1916.	
January	355 42	January	16,280 34
February	162 69	February	28,212 93
March	351 46	March	3,987 86
April	7,052 24	April	8,415 80
May	15,307 88	May	9,159 33
June	2,250 24	June	5,092 46
	$62,603 68		$78,214 77

TABLE No. 33a—Continued.

Total Expenditures Against the School Book Fund for the Sixty-sixth and Sixty-seventh Fiscal Years.

	Royalty	Printing	Freight express	Salary	Miscellaneous	Totals
Sixty-sixth fiscal year	$40,543 58	$69,414 17	$3,155 81	$350 00	$95 23	$113,558 79
Sixty-seventh fiscal year	27,235 08	74,710 65	2,833 12	600 00	66 00	105,444 85

TABLE No. 33a—Continued.

Statement of Royalty Paid Quarterly to the Following Book Companies for the Sixty-sixth and Sixty-seventh Fiscal Years.

Name of company	Sixty-sixth fiscal year	Sixty-seventh fiscal year
American Book Company	$14,131 67	$10,308 16
D. C. Heath & Co.	4,376 43	2,911 94
Macmillan Company	11,745 47	6,959 03
Newson & Co.	1,012 08	850 22
Silver-Burdett & Co.	8,161 39	5,465 93
World Book Company	1,116 54	731 68
Ginn & Co.	----------	8 40
Totals for year	$40,543 58	$27,235 08

SUMMARY OF TEXTBOOKS.

Sold and Distributed Free: 1887–1916.

Period	Number of books sold (a)	Number of books distributed free (b)	School book fund (c)	Royalty fund (d)	Amount (e)
Prior to July 1, 1904	4,052,327	------------	$1,429,297 52	$10,821 75	$1,440,119 27
July 1, 1904, to June 30, 1906	857,749	------------	310,105 09	87,471 36	395,272 38
July 1, 1906, to June 30, 1908	1,072,575	------------	292,748 67	101,880 05	394,628 72
July 1, 1908, to June 30, 1910	1,178,594	------------	247,944 36	75,859 56	323,803 92
July 1, 1910, to June 30, 1911	683,079	------------	152,341 82	41,922 60	194,264 42
July 1, 1911, to June 30, 1912	683,527	------------	159,113 15	42,100 08	201,213 23
July 1, 1912, to June 30, 1913	476,241	477,933	78,352 70	55,321 72	106,037 84
July 1, 1913, to June 30, 1914	13,526	1,379,154	1,645 48	86,140 38	2,319 56
July 1, 1914, to June 30, 1915	35,957	493,159	4,628 53	30,188 87	6,716 68
July 1, 1915, to June 30, 1916	32,766	491,970	4,331 32	26,493 15	6,370 06
Totals	9,086,341	2,842,216	$2,680,508 64	$558,199 52	$3,070,746 08

Columns (a) and (b) are self-explanatory.

Column (c) is the total amount of money paid into the school book fund as a result of the sale of books listed in column (a).

Column (d) is the amount of money paid to the textbook companies for the use of plates in the manufacture of all state textbooks. This includes both books sold and books distributed free.

Column (e) is the total amount of money paid into the state treasury as the result of sales, column (a).

STATISTICAL SUMMARY.

TABLE No. 34. General Review of Schools Giving Statistical Summary for the Kindergarten, Elementary, High and Normal Schools. Recapitulation.

TABLE No. 34.

Statistical Summary of 1915 and 1916.

(Kindergarten, Elementary, High and Normal Schools, Institution for the Deaf and the Blind, California Polytechnic School and the University of California.)

(1) Kindergarten Schools.

	1915.	1916.
Number of counties maintaining	20	25
Number of teachers employed (women)	442	548
Grade of certificate held by teachers—		
Kindergarten primary	397	499
Kindergarten (special)	45	49
Totals	442	548
Number of pupils enrolled—		
Boys	8,173	10,300
Girls	8,196	10,421
Totals	16,369	20,721
Average daily attendance	8,691	11,154
Average number of days schools were open for the year	180	173
Average salary paid teachers	$818 01	
Supervisors* (two in state)	----------	$850 00
Principals* (197 in state)	----------	$660 87
Regular teachers* (349 in state)	----------	$588 77
Number of school visits made by—		
County superintendents	527	800
School trustees	420	663
Number of books in libraries	1,633	2,169

Financial Statement.

Receipts from—	1915.	1916.
Balance on hand	$9,492 93	$55,709 48
From tax for maintenance	447,124 77	642,087 95
From special tax for buildings	----------	1,193 62
Donations, etc.	3,005 74	1,171 03
Totals	$459,623 44	$700,162 08
Expenditures for—		
Salaries of teachers	$346,553 05	$409,144 16
Supplies, etc.	38,830 48	127,288 57
Sites and buildings	----------	705 51
Apparatus	----------	4,042 37
Totals	$386,955 61	$550,840 51
Balance unexpended	$72,667 83	$149,321 57
Average tax rate for—		
Maintenance	$0 07	$0 064
Buildings	----------	03
Average cost per pupil per year's salaries and supplies	23 54	26 12
Number of schoolhouses built of—		
Concrete	6	1
Brick	2	5
Wood	39	46
Totals	47	52

Many of the kindergarten schools are held in the elementary buildings. Hence a variation in the report on buildings and valuation of property.

Valuation of property—	1915.	1916.
Sites, buildings and furniture	$79,948	$97,318
Library books	5,160	3,518
Apparatus	----------	8,652
Totals	$85,108	$109,488

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*The plan of giving salaries of supervisors, principals and teachers separate was not adopted till 1916.

(2) Elementary (Primary and Grammar) Schools.

	1915.	1916.
Number of school districts—		
Active at beginning of year	3,402	3,456
Newly organized	77	56
Suspended re-established	26	31
Lapsed	7	11
Suspended during year	32	30
Combined	14	8
Total active at close of year	3,452	3,494
Number of districts in union schools	-----------	27
Number of schoolhouses built of—		
Stone	32	18
Concrete	131	161
Brick	339	368
Wood	4,101	4,147
Totals	4,603	4,694
Number of districts maintaining school—		
Less than 120 days	15	19
Between 120 and 160 days	482	1,018
Between 160 and 200 days	2,656	2,410
Over 200 days	252	20

(The falling off in time is due to less funds, owing to the repeal of the poll tax and to a closer estimate since the time for 1916 was actual time the school was open. 1916 in many instances included institute and holidays.

	1915.	1916.
Number of teachers estimated on average daily attendance (for apportionment of money)	11,646	11,975
Number of teachers employed—		
Men	1,238	1,202
Women	11,767	12,080
Totals	12,969	13,318
Grade of certificate held by teachers in elementary schools—		
High school	536	544
Elementary or grammar school	11,623	11,924
Primary	70	64
Special	740	786
Totals	12,969	13,318
Enrollment of pupils:		
First year—		
Boys	46,463	46,269
Girls	40,397	40,548
Second year—		
Boys	29,766	29,203
Girls	25,942	26,749
Third year—		
Boys	27,657	28,533
Girls	25,389	26,537
Fourth year—		
Boys	26,622	27,346
Girls	25,091	24,879
Fifth grade—		
Boys	24,932	25,638
Girls	22,956	22,992
Sixth grade—		
Boys	22,193	23,453
Girls	20,526	21,552
Seventh grade—		
Boys	20,769	20,848
Girls	19,244	19,493
Eighth grade—		
Boys	19,685	19,538
Girls	18,723	19,424
Total boys	217,524	221,388
Total girls	198,268	202,174
Grand totals	415,792	423,562

	1915.	1916.
Number of pupils enrolled in postgraduate grammar schools:		
First year—		
Boys	----------	174
Girls	----------	213
Second year—		
Boys	----------	9
Girls	----------	15
Total boys	----------	183
Total girls	----------	228
Grand total	----------	411

(The law creating this school or course did not go into effect till August, 1915.)

	1915.	1916.
Number of graduates from grammar schools—		
Boys	13,480	13,440
Girls	14,029	14,069
Totals	27,509	27,509
Number of graduates from postgraduate schools—		
Boys	----------	12
Girls	----------	14
Total	----------	26
Average number of days school was maintained for year	172	166
Average daily attendance	331,000	340,943
Number of visits made by—		
County superintendents	21,947	24,038
School trustees and members of boards of education	19,655	20,352
Number of books in school libraries	2,859,277	2,928,203
Number of books in county teachers' libraries in office of county superintendent	49,651	75,686

Financial Statement.

	1915.	1916.
Receipts from—		
Balance on hand	$4,648,666 49	$5,117,172 56
State apportionments	5,667,022 11	5,719,103 60
County taxes	6,411,390 82	6,493,157 78
City or district taxes	4,197,062 93	4,715,041 22
Sale of bonds for building	5,208,550 96	3,805,272 04
Miscellaneous sources	858,616 27	708,147 98
Total resources for year	$26,991,309 58	$26,557,895 18
Expenditures for—		
Teachers' salaries	$12,062,538 24	$12,040,008 31
Current expenses, supplies, etc.	4,027,254 14	3,852,098 73
Sites and buildings	5,417,941 88	5,550,022 70
Library books	153,404 48	175,481 16
Apparatus (included in books for 1915)	------------	44,464 33
Total expenditure	$21,661,138 74	$21,662,075 23
Balance on hand at close of year	$5,330,170 84	$4,895,819 93
Valuation of property—		
Sites, buildings and furniture	$53,711,086	$56,206,702
School libraries	1,158,292	1,044,417
Apparatus	697,089	772,607
Totals	$55,565,467	$58,023,726

	1915.	1916.
Average tax for county school purposes	$0.273	$0.286
Average special tax rate for—		
Maintenance	.214	.1883
Buildings	.321	.3211
Total amount of outstanding bonds	$23,099,987	$28,600,496
Average rate of interest paid on bonds	$0.054	$0.0567
Cost per pupil per annum for education, excluding cost of new buildings	$39 06	$38 04
Average rate per pupil apportioned on average daily attendance by counties, which includes state and county money after giving the $550 per teacher	$15 93	$16 58
Average annual salary paid teachers, that is average amount of money paid the teacher for the year—		
Men	$1,060 55	
Women	746 21	

The plan of giving salary was changed for 1916, and the following report is shown:

	No.	
Supervising principals—		
Men	190	$1,982 50
Women	157	1,921 43
Paid principals—		
Men	435	1,223 99
Women	737	970 05
Regular teachers—		
Men	381	841 93
Women	10,535	868 95
Special:		
Supervisors of subjects—		
Men	60	1,537 91
Women	131	1,409 60
Teachers of subjects—		
Men	170	1,040 20
Women	522	919 77

(3) High Schools.

	1915.	1916.
Number of schools—		
County	21	*8
City	49	62
District	41	45
Union	137	155
Joint union	17	18
Totals	265	288
Number and kinds of school buildings—		
Stone	9	32
Concrete	68	79
Brick	133	165
Wood	138	119
Totals	348	395
Number, sex and position of teachers:		
Regular—		
Men	----------	1,112
Women	----------	1,721
Special—		
Men	----------	498
Women	----------	668
Total men	1,394	1,610
Total women	1,989	2,389
Grand total	3,383	3,999

---

*Many county high schools were changed to union by act of 1915.

Total number of students enrolled by year and by sex:	1915.	1916.
First year—		
Boys	19,314	23,997
Girls	19,097	23,009
Second year—		
Boys	7,823	9,930
Girls	9,257	11,159
Third year—		
Boys	5,009	6,683
Girls	6,109	8,342
Fourth year—		
Boys	4,072	5,576
Girls	5,748	6,909
Total boys	36,218	45,986
Total girls	40,211	49,419
Grand total	76,429	95,405
Number of graduates for year—		
Boys	3,525	3,781
Girls	4,851	5,182
Totals	8,376	8,963
Number of students enrolled in postgraduate departments:		
First year—		
Boys		393
Girls		550
Second year—		
Boys		91
Girls		84
Total boys		484
Total girls		634
Grand total		1,118
Attendance, etc.:		
Average daily attendance	53,397	58,881
Average length of term (in days)	185	187
Number of volumes in libraries	367,924	413,477

Financial Statement.

Receipts from—	1915.	1916.
Balance on hand	$2,856,830 57	$2,656,299 69
State apportionments	725,412 12	827,200 52
County taxes		3,326,893 22
District taxes for maintenance	6,651,756 70	3,802,076 52
District taxes for building	2,185,013 73	117,713 20
Sale of bonds		1,717,016 93
Miscellaneous sources	133,481 13	756,006 70
Totals	$12,516,494 25	$13,203,206 78

NOTE.—The law providing county tax for high schools went into effect August, 1915. Special tax and bonds for buildings were reported as one up to 1916, hence change this year.

Expenditures for—	1915.	1916.
Salary of teachers	$4,658,412 87	$5,266,521 40
Janitors and other employees		678,327 25
Supplies, wood, etc.	1,852,981 91	1,119,773 94
Books and apparatus	145,748 13	158,145 74
Laboratory supplies		96,745 59
Sites, buildings and furniture	2,986,724 02	2,594,226 03
Totals	$9,643,866 93	$9,943,739 95
Balance on hand at close of year	$2,872,627 32	$3,289,466 83
Average cost per pupil for all cost of high schools, excepting the cost for buildings	$87 10	$76 72

NOTE.—This cost has fallen off mainly on account of the large number of students enrolled in the evening high schools.

	1915.	1916.
Average tax rate for—		
County, for maintenance		$0.142
District tax for maintenance	$0.345	.235
District, for building	.168	.1175
Rate of interest paid on bonds	.0516	.0514
Total outstanding bonds	$12,322,843	$13,154,639
Valuation of all property—		
Sites, buildings and furniture	$22,608,825	$25,150,585
Laboratories, etc.	682,902	859,092
Books and apparatus	495,100	578,993
Totals	$23,786,827	$26,588,670

Average salary paid teachers:		
Principals—	No.	
Men	264	$2,104 22
Women	15	1,574 00
Teachers (regular)—		
Men	856	1,455 85
Women	1,697	1,331 43
Special—		
Men	496	1,295 49
Women	671	1,271 70

Up to 1916 the annual salary was given simply by men and women. For 1915 the following was reported:

Men	$1,502 96
Women	1,157 20

Miscellaneous School Statistics.

	1915.	1916.
Number of teachers attending institutes—		
High schools	3,263	3,861
Elementary schools	12,465	12,884
Kindergartens	411	524
Totals	16,139	17,269
Cost of teachers' institutes—		
Paid instructors	$14,238 95	$10,541 70
Paid for expenses	3,417 58	3,908 22
Totals	$17,656 53	$14,549 92
Cost of trustees' meetings—		
Paid instructors	$345 10	$1,117 90
Paid for expenses	1,350 85	2,513 40
Totals	$1,695 95	$3,631 30

NOTE.—In most instances the expenses are paid from the county or current expense of the school districts. The law really intends this. But in some of the counties the superintendent pays directly from the unapportioned county school funds. In the first instance the expense is not shown in this report, as it is included in the expense of the school district. In the report given here is included the expenses paid from the general or unapportioned county school fund.

Number of certificates issued by county boards of education for the year:		
On examination, to—	1915.	1916.
Men	117	87
Women	468	329
On credentials, to—		
Men	765	678
Women	3,533	4,537
Amount of fees collected for examination and issuance of certificates	$11,549	$12,878
Number of teachers in kindergarten, elementary and high schools	16,794	17,860
Number of pupils enrolled in kindergarten, elementary and high schools	508,590	540,688
Total average daily attendance in kindergarten, elementary and high schools	393,088	410,978

	1915.	1916.
Total receipts from state, county and city and miscellaneous sources	$37,897,997 66	$32,632,082 46
Total expenditures for kindergarten, elementary and high schools	31,691,961 28	30,126,651 69
Total cost for salary of county superintendents and deputies		$204,877 43
Cost of traveling of such officers		18,021 35
Cost of postage and expressage		1,163 74
Other expenses—supplies, etc.		13,748 80
Total		$243,811 32
Total cost of salaries of members of county board of education		$57,452 53
Traveling expenses of members		7,594 88
Other expenses		6,181 46
Total		$71,228 87
Total cost of city superintendents for salaries and for salaries of deputies		$235,165 55
Cost of traveling for such officers		4,973 13
Other office expenses		27,168 87
Total		$267,307 55

(4) State Normal Schools.

	1915.	1916.
Number of schools	8	8
Number of teachers employed:		
Men	69	75
Women	198	209
Totals	267	284
Number of students enrolled:		
Normal department—		
Boys	295	382
Girls	4,331	4,615
Totals	4,626	4,997
Number of pupils enrolled:		
Training schools—		
Boys	1,535	1,583
Girls	1,628	1,670
Totals	3.163	3,253
Number of graduates:	1915.	1916.
Boys	95	93
Girls	1,739	1,515
Totals	1,834	1,608
Grand total since organization:		
Boys		1,172
Girls		15,962
Grand total		17,134

Financial Statement.

Receipts from—		
Balance on hand	$167,336 94	$32,607 06
State appropriations	790,709 65	1,109,042 50
Tuition and other sources	36,462 39	9,054 19
Miscellaneous sources	-------------	16,356 59
Totals	$995,508 98	$1,161,060 34
Expenditures for—		
Salary of teachers	$384,185 88	$488,926 85
Janitors, labor and supplies	107,453 02	123,539 36
Sites, buildings and furniture	113,106 62	267,810 14
Books and apparatus	10,587 87	11,368 52
Totals	$615,333 39	$891,644 87
Balance on hand in funds of schools	$380,175 59	$269,915 27

	1915.	1916.
Valuation of property—		
Grounds	$573,000	$570,500
Buildings	1,744,570	2,116,584
Furniture	115,149	227,223
Books	212,429	104,867
Apparatus	51,001	39,125
Supplies on hand		13,978
Totals	$3,696,149	$3,072,277
Number of acres in normal grounds	159.47	160.97
Number of books in libraries—		
At beginning of year	91,394	97,315
Bought or donated	8,538	10,879
Lost or destroyed	—1,860	—4,707
Total at close of year	98,072	103,487

(5) Recapitulation.

	1915.	1916.
Number of elementary school districts	3,452	3,494
Number of high schools	265	288
Number of teachers employed in all schools—		
Kindergarten	442	548
Elementary	12,969	13,318
High schools	3,383	3,999
Normal schools	267	284
California Polytechnic	15	17
Institution for the Deaf and the Blind	36	39
University of California	411	433
Totals	17,523	18,638
Students enrolled in all schools—		
Kindergarten schools	16,369	20,721
Elementary schools	418,955	427,231
High schools	76,429	†96,523
Normal schools	4,626	4,997
California Polytechnic School	162	176
Institution for the Deaf and the Blind	286	276
University of California	‡6,746	‡7,336
Totals	523,573	557,350
Receipts—		
Kindergartens	$459,623 44	$700,167 08
Elementary schools	26,991,309 58	26,557,895 18
High schools	12,516,494 25	13,203,206 78
Normal schools	995,508 98	1,161,006 34
California Polytechnic	89,643 93	89,898 09
Institution for the Deaf and the Blind	105,637 12	115,868 54
University of California	2,784,024 28	3,492,013 71
Totals	$43,942,241 58	$45,320,055 72
Expenditures—		
Kindergartens	$386,955 61	$550,840 51
Elementary schools	21,661,138 74	21,662,075 23
High schools	9,643,866 93	9,913,739 95
Normal schools	615,333 39	891,644 87
California Polytechnic	81,041 78	88,582 43
Institution for the Deaf and the Blind	102,273 75	110,266 35
University of California	2,727,616 84	3,246,073 19
Totals	$35,218,227 04	$36,463,222 53

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*Includes 3,253 elementary pupils enrolled in normal training schools and 411 postgraduate grammar school pupils.

†Includes 1,118 postgraduate high school students.

‡Includes regularly enrolled students. See University Report for summer school enrollment and the California Polytechnic Report for pupils enrolled in extension courses.

	1915.	1916.
Valuation of all property—		
Kindergarten	$85,108 00	$109,488 00
Elementary schools	55,566,467 00	58,023,726 00
High schools	23,786,827 00	26,588,670 00
Normal schools	2,696,149 00	3,072,427 00
California Polytechnic	*558,669 00	558,669 00
Institution for the Deaf and the Blind	*1,343,081 00	1,343,081 00
University of California	10,835,152 00	11,761,000 00
Totals	$94,871,445 00	$101,457,061 00
Number of books in school libraries—		
Kindergartens	1,633	2,169
Elementary schools	2,859,277	2,928,203
High schools	367,924	413,477
Normal schools	98,072	103,487
California Polytechnic	3,500	3,600
Institution for the Deaf and the Blind	3,800	6,300
University of California	304,666	332,884
Totals	3,638,872	3,790,120
Number of graduates—		
Elementary schools	27,509	*27,509
High schools	8,376	8,882
Normal schools	1,834	1,608
California Polytechnic	22	------------
Institution for the Deaf and the Blind	19	21
University of California	972	1,080
Totals	38,732	39,100
Total outstanding bonded debt—		
Elementary schools	$24,093,010 00	$28,600,496 00
High schools	12,349,843 00	13,361,189 00
Totals	$36,442,853 00	$41,961,685 00

Total Expenses for All School Purposes.

	1915.	1916.
Kindergartens	$386,955 61	$550,840 51
Elementary schools	21,661,138 74	21,662,075 23
High schools	9,643,866 93	9,913,739 95
Totals	$31,691,961 28	$32,126,655 69
Overhead expenses—		
Office of county superintendent of schools	-------------	$243,811 32
Expense of county board of education	-------------	71,228 87
Expenses of city offices	-------------	†267,307 55
Total	-------------	$315,040 19
Office of superintendent of public instruction	$16,512 90	$17,584 91
Total cost of state board of education	31,647 95	25,816 57
Entire cost of textbooks, manufacture, royalty, cost of shipment, etc.	113,558 79	105,444 85
Totals	$161,719 64	$148,846 33
State normal schools	615,333 39	891,644 87
California Polytechnic School	81,041 78	88,582 43
Institution for the Deaf and the Blind	102,273 75	110,266 35
University of California	2,727,616 84	3,246,073 19
Totals	$3,526,265 76	$4,336,566 84
Grand totals	$35,379,946 68	$36,927,109 05

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*Same as 1916, as no report was given for 1915.

†This item is included in the regular school expenses and is not added in the total.

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REPORT

OF THE

State Board of Viticultural Commissioners

For the Period September 4, 1913
to December 1, 1916

CALIFORNIA STATE PRINTING OFFICE
SACRAMENTO
1916

28738

Honorable HIRAM W. JOHNSON,
Governor of the State of California,
Sacramento, California.

SIR: Your State Board of Viticultural Commissioners deems it advisable at this time to make to you a general report of its activities since the creation of this department of the state government, and by resolution, adopted November 28, 1916, at a regular meeting, the president, secretary and treasurer of the board were directed to submit this general resumé of the work of the commission since the appointment of its members by yourself.

The act of the legislature under which the State Board of Viticultural Commissioners was created was approved by you on May 28, 1913, and went into effect on August 10, 1913.

The appointments were subsequently made by you and the organization meeting of the board took place on September 4, 1913, at which time C. J. Wetmore, of San Francisco, was elected president; Frank T. Swett, of Martinez, vice president; H. F. Stoll, of San Francisco, treasurer, and E. M. Sheehan, of Sacramento, secretary.

Six of the commissioners were selected from the six viticultural subdivisions of the state and three were selected at large.

The membership of the board consists of the following gentlemen:

C. J. Wetmore, San Francisco, at large.
H. F. Stoll, San Francisco, at large.
Paul Masson, San Jose, at large.
Sheridan Peterson, Santa Rosa, First District.
Frank T. Swett, Martinez, Second District.
C. E. Bundschu, San Francisco, Third District.
Secondo Guasti, Los Angeles, Fourth District.
J. E. Beach, Fair Oaks, Fifth District.
W. M. Giffen, Fresno, Sixth District.

On the date of organization, and in pursuance of the statute creating the board, Commissioners Masson, Peterson, Swett, Bundschu and Beach were designated by lot to serve for the four-year term and Commissioners Stoll, Wetmore, Guasti and Giffen were chosen for the two-year term, or until their successors should be appointed and qualified.

The terms of the commissioners serving for two years expired August 30, 1915, and these gentlemen were reappointed.

The board has at its disposal an annual appropriation of $7,500, and with this amount it has endeavored to do the most possible good for the raisin, wine and table grape industry of this state, which represents an investment in California of $150,000,000 and covers an area of 360,000 acres of grapes. The normal annual yield of this industry to the state of California is $30,000,000, and the income to the state comes from without our state borders to the extent of 90 per cent. We cite these figures merely to indicate that the annual appropriation allowed the board for fostering and protecting this great industry is much out of proportion to the value of viticulture as an asset of our state.

After organization the first work of the board was by way of striking up an acquaintance with the individual vineyardists of California. We immediately commenced the preparation of a general roster of vineyard owners, and this work has progressed under much financial handicap until we now have a roster containing the names, post-office addresses, acreages and varieties of the bulk of vineyard owners in the state. It gives detailed information in relation to 5,750 vineyardists of California, together with names and post-office addresses of 7,200 others from whom we are collecting specific data. Additional work along these same lines, as finances permit, will probably increase the total number to 15,000.

If we had the necessary financial means to send agents into every viticultural locality we might have completed our roster in shorter time, but the work had to be done principally by voluminous correspondence with county assessors and county horticultural commissioners, as well as by personal inspection and investigation on the part of the several commissioners with assistance from temporary help which we are able to engage. Most of the information came by letters direct from the individual owners and growers, so the data we have on hand is very accurate.

We estimate at the present time that there are in the state 170,000 acres planted to wine varieties of grapes, 140,000 acres planted to raisin varieties and 50,000 acres planted to table varieties.

There have been recent extensive plantings of raisin varieties in the Fresno section and in the northern part of the state in Yuba and Sutter counties, and when this data is completed the raisin acreage will have assumed greater proportions on our roster.

Here we might say that in comprehending its work this board came to the conclusion that the most good could be done along commercial lines and that cultural and diseased conditions of the vineyards should be given attention by the viticultural department of the University and the State Farm, which have been equipped for doing this class of work. The statute creating the Viticultural Commission also provides for this cooperation, and the first work undertaken by us was in behalf of commercial conditions affecting the table grape growers of the state. We learned that this branch of the industry was seriously affected by the short-sighted practice on the part of growers in their anxiety to put early table grapes into the hands of Eastern marketers. We readily came to the conclusion that a standardization law governing shipments or a standardization policy adhered to by growers generally was necessary for bettering market conditions. We wrote to practically every large distributor of our table grapes in the United States and in Canada, and we received more than two hundred letters from these distributors, almost all of which called attention to the fact that markets for California table grapes were greatly injured by the early receipt of green and unripe grapes from our state.

We then wrote and interviewed the principal shippers and packers in California, and we take credit for having made the start of a campaign the following season which did a great amount of good and which eventually brought about the adoption of fruit standardization laws in this state. Our activities at this particular time received the hearty endorsement and approval of the Western Fruit Jobbers' Association, and this initial work made it possible to bring about excellent results and a general agreement among producers and shippers looking toward the adoption of standards that would prevent the exportation from this state of grapes and other fruits unfit for consumption by reason of their green and unripe condition.

In this connection we should mention the fact that in the first prosecution instituted under the fruit standardization law the testimony of a representative of our department was mainly instrumental in securing the conviction for violation of the law as indicated by a letter from the district attorney's office of Tulare County written this office and reading as follows:

VISALIA, CALIFORNIA, September 13, 1915.

MR. E. M. SHEEHAN, *Secretary,*
State Viticultural Commission,
Sacramento, California.

DEAR SIR: There was tried last week at Dinuba in this county what I believe to be the first case of criminal prosecution under the new fruit standardization law. The charge was the wilful shipment to Eastern markets of mildewed grapes, and a verdict of guilty was rendered after a hard-fought contest. I conducted the prosecution.

It came to my knowledge that Mr. J. W. Jeffrey; who is connected with your commission, was at Fresno, and at my request he attended the trial for two days. His services in behalf of the prosecution were most valuable indeed. From his long experience and his knowledge of the fruit business he was able to give me many very helpful suggestions during the trial; as an expert testifying to the character and results of mildew he demolished many of the contentions of the defense; also the presence of a man of his standing and connection with the horticultural and viticultural interests of the state impressed upon the jury the importance with which this law is regarded by those most concerned.

I write, therefore, to express my grateful appreciation to the Viticultural Commission for Mr. Jeffrey's attendance upon this trial. It is a great encouragement to the prosecuting attorneys to be supported by the executive departments as I was supported by your representative in this trial and I know that such effort as he put forth in this instance to bringing about the due enforcement of the law in a related industry meets with the general approval of those who observed this case.

Yours very truly,
(Signed) JAMES M. BURKE,
Assistant District Attorney.

The verdict in this case was appealed from but was sustained by the Court of Appeal.

This work was followed up the succeeding year and a representative of this board during the past vintage season has been actively engaged in inspection work for the purpose of bettering the quality of the table grape pack. This inspection applied in the early shipping district of the Imperial Valley, as well as in the San Joaquin and Sacramento valleys, which are the great table grape centers of the state. Our representative has been in touch with the county horticultural commissioners and inspectors of the various sections and has made thorough examinations of the pack in hundreds of packing houses throughout the table grape sections of the state. We did not find the old complaint being made to any great extent at this time, and this line of work should go on until no one attempts to evade the law, for it has redounded to the general good of the table grape producers.

During this same period the attention of this department was called by Professor Bioletti, of the University of California, to a matter before the United States Department of Agriculture at Washington relating to the definition of pure wine by that department. We realized that such a definition was very important to the wine grape growers of California, and the secretary of this board wrote a letter to the Washington authorities under date of October 28, 1913, pleading the cause of California and requesting that the definition of pure wine be made so clear as to mean a product made out of nothing but grapes and without the addition of water or foreign sugars. This suggestion had great influence with the Secretary of Agriculture, and at that time the definition of the department at Washington was made satisfactory to Californians.

During the Panama-Pacific International Exposition this board maintained an educational exhibit at the Exposition grounds in the Food Products Palace and distributed viticultural literature to thousands of people who called during the period of the fair.

The board also spent a portion of its appropriation in producing moving picture reels showing the viticultural industry in all of its phases, and these reels have been used to good advantage at many of the meetings held throughout the state each year in the viticultural sections.

Bulletins and reports have been issued from time to time as deemed necessary by this board, and these have been distributed to the growers of the state at the time of issuing, and copies have been sent to your office.

District meetings have been held each year in various parts of the state as required by the statute, and these have always been well attended. Generally it has been the plan of the board to have the secretary address the growers, and in this meeting work we have had the cooperation of experts connected with the University of California.

By way of relief of the table grape market we have encouraged from time to time in the press and by correspondence the packing of certain varieties of California table grapes in redwood sawdust in drums, and the shipping of them to Eastern markets for winter consumption. This proved in many instances much of a success, and our California grapes are now found in Eastern markets for winter consumption in competition with the Almeria grapes of Spain, which come into this country packed in cork. The varieties most extensively used in this state have been the Emperor grapes of the Fresno section.

A ''Grape Day'' was held at the Panama-Pacific International Exposition under the auspices of this board by invitation of the board of directors of the Exposition. This occurred on October 8, 1915, in the Court of Ceres, and was attended by many thousands of people. On that day thousands of bunches of California grapes were given away to men, women and children who participated in the event.

There was also held at the Exposition on July 12th and 13th, under the auspices of this board, in conjunction with Eastern officials, the first International Congress of Viticulture ever held in the United States. It was a very successful session participated in by people interested in the growing of grapes in this country and many of the nations of Europe, and your board succeeded in financing and issuing a report of that congress consisting of 324 pages, which has been distributed to all of the important libraries of the United States and Europe, as well as to the horticultural commissioners of the state of California. It is one of the most comprehensive and instructive reports ever issued anywhere in the world by a congress of viticulture, and the valuable papers in this report treat of almost every known condition affecting viticulture. The board considers this report a most valuable document.

In line with its work of fostering and protecting the grape industry, this commission was importuned by grape growers and wine makers throughout the state to concern itself in behalf of the grape industry when the congress of the United States passed the Emergency Revenue Act on October 22, 1914, vitally affecting the wine grape vineyards and wine makers of California. That federal statute imposed an exorbitant and confiscatory tax on wines, and at the time of the adoption of this law there were individual representatives of California in Washington arguing against the imposition of such a tax, but their pleadings were of no avail, and our wine manufacturers found themselves confronted with a fortifying tax in the making of sweet wines eighteen times higher than it had ever been before, and, in addition, a stamp tax on wines amounting in the case of dry wines to nearly the cost of production.

Your board knew that a continuation of such a law for any extended period would result in the destruction of the wine grape industry of this state, and its first work by way of relief was in inducing our state legislature to adopt Assembly Joint Resolution No. 29, on May 9, 1915, memorializing congress at its next session to grant relief to the viticultural interests of California by repealing or amending the act adopted October 22, 1914.

Following up this work, mass meetings were held in the state, and it was the unanimous opinion of grape growers and wine makers that all attempts at relief legislation should be made through the State Board of Viticultural Commissioners. The board was asked to select and send a delegation to Washington in behalf of California's interests. The delegation that journeyed to the national capital consisted of Mr. C. E. Bundschu, of San Francisco, and Mr. F. Albertz, of Cloverdale, representing the dry wine grape growers of Napa and Sonoma counties; Mr. H. E. Welch, of Lodi, representing the table grape growers and sweet wine makers of the northern San Joaquin valley; Mr. James Madison, of Fresno, representing the interests of the California Associated Raisin Company, and Mr. E. M. Sheehan, representing the State Board of Viticultural Commissioners.

The expenses of this committee, with the exception of the cost of telegrams to and from our office and the incidental expenses of the secretary of the board on his one trip to Washington, were defrayed by private subscription from growers, business men and wine makers of the state.

Just in advance of the appearance of this delegation in Washington, your board succeeded in inducing United States Commissioner of Internal Revenue Osborn to some to California to see what havoc and destruction had been wrought by the federal tax law affecting wines. The commissioner made enough of an investigation in several of the districts of the state to realize that the industry could not live under the federal tax law, and he was naturally in a receptive mood when the California delegation called on him at his office in Washington. This was in December, 1915, and at that time preliminary plans were laid for getting relief. Conferences were held with the California delegation of senators and representatives on several occasions, as well as interviews with committees of both houses and government department officials directly concerned in the matter.

Nothing was accomplished by way of congressional action at the short session, but cooperation was promised and the California delegation returned home.

After returning, many more meetings were held with growers and wine makers in the state under the auspices of this board, and future efforts were placed in the hands of this commission and its special representative, Mr. H. E. Welch, of Lodi, who, in conjunction with the secretary of the board, did all further work in the matter of shaping new legislation. Suffice it to say here that on September 9th of this year the federal law was amended reducing the 55-cent brandy tax to ten cents per proof gallon, reducing the eight-cent stamp tax on dry wines to four cents per gallon and increasing the eight-cent tax on sweet wines to ten cents per gallon. The amended law also provides for a refund of the brandy tax of 55 cents on all wines produced under that tax and still in the hands of producers.

All this accomplishment was a great relief to the industry in this state, as evidenced by a normal production of wine during this season of 1916. During the preceding season, during which operations were necessarily under the exorbitant federal tax, the production of sweet wine in California fell off nearly 80 per cent, and it proved to be one of the worst seasons ever experienced by the wine grape growers of California. Manufacturers could not afford to buy their grapes, and the culls of the raisin and table grapes also went begging. All of this changed this year. Wine grapes have commanded remunerative prices, and the culls of the table and raisin grape vineyards have found ready markets with the wineries. The entire expense of the relief work was inconsequential as compared with the great benefit, and we are happy to say at this time that all three branches of the industry have enjoyed a most prosperous season.

The Viticultural Commission with its agent, Mr. H. E. Welch, of Lodi, takes great credit for the accomplishment that has saved the wine grape industry of this state and restored it to its normal condition. On a basis of a normal production in this state, if such production could have been financed by some extraordinary means, the saving in tax money to the industry in California this year by reason of the lessening or reduction of the tax has been in the neighborhood of $3,000,000, and this applies every year.

Even this brief mention of legislative work would be lacking if we did not subscribe our approval of the valuable services rendered by Congressman Kent during the entire period of the year when California was making her fight in congress. Our senators and all of our representatives were interested and assisted materially, but Congressman Kent bore the burden of the effort, and to him and to Senator Phelan this board owes particular thanks, as well as to Mr. H. E. Welch, of

Lodi, who spent his time for several months in Washington without remuneration other than his actual living expenses.

Among many district meetings held throughout the state since the creation of this commission there was one of much importance held on September 2, 1916, in St. Helena, the idea being to meet with the growers of Napa and Sonoma valleys in an endeavor to obtain from them opinions in relation to the control of frost damage. A destructive frost did great damage in the late spring of this year to vineyards in the Napa, Sonoma, Sacramento, Livermore and northern San Joaquin territories.

The meeting in St. Helena was addressed by Professor Bioletti, who gave his ideas regarding frost control, and in advance of the meeting the board published quite an exhaustive bulletin on the subject. Ideas were exchanged at the meeting among the growers and experiments will be tried in the vineyards during the coming pruning season with a view to ascertaining whether or not early or late pruning of vines may control growth so as to preclude the possibility of damage from even very late visitations of frost.

An important undertaking in which this board is now engaged is relief work for the vineyardists in Fresno and Tulare counties—particularly those who are cultivating raisin and table grape vineyards. The growers in these sections have appealed to the board for help in the matter of eradicating disease among the vines there, and in support of that appeal this office has made preliminary investigations. The conditions found are quite fully described in the report of the expert sent into the section at the expense of this office. The report reads as follows:

SACRAMENTO, October 3, 1916.

MR. E. M. SHEEHAN, *Secretary,*
State Board of Viticultural Commissioners,
Sacramento, California.

MY DEAR MR. SHEEHAN: I am addressing you this report personally, leaving you to determine the propriety of giving it publicity.

I left Sacramento on Tuesday, September 26th, arriving at Fresno the same afternoon. On Wednesday I drove over to Visalia and as far as Exeter, the extreme limit of the Emperor grape district, returning to Visalia late in the afternoon to meet Mr. Chas. F. Collins, horticultural commissioner of Tulare County, and Thursday was spent with Mr. Collins. Late Thursday evening I reached Fresno. Meantime, I had agreed to meet Collins Friday morning at Dinuba, which I did, and it was the experience of the day there which I wish to set forth in this report.

After visiting several packing houses in operation, Mr. Collins took me in his machine to the Frank Wilson district to see some diseased vineyards.

In the first vineyard inspected I saw great spots in which the magnificent vines were dead or dying, while all around these spots were growing the largest and most productive Thompson's Seedless I have ever seen. I was able to tell Collins that the trouble was not Phylloxera, mildew, "Anaheim disease" or frost. What the disease or trouble is no one can find out, but it is so alarming that I felt justified in seeing all of it I could that trip and now feel that the State Board of Viticultural Commissioners should be made acquainted with this great menace.

I was shown at least a dozen vineyards, some of which were worse than the first one visited, and all of them as fine vines as ever grew except where this malady occurs.

This is what I learned from the vineyardists and which I wish especially to notice. The University has been repeatedly urged to send a corps of investigators and experimenters into this field, there to conduct a long and thorough inquiry into this trouble. With the exception of a brief visit or two from Prof. Smith, nothing has been done. Collins has urged action over and over, he says, and has excavated two or three vines and sent them away for examination. The growers have been even more insistent, but with one accord testify that no real effort has been made to determine to what this devastation is due.

I asked these men if the physical condition of the subsoils of these spots had been examined by a soil survey expert. No. If special irrigation or fertilization had been applied by any competent authority, federal or state? No. I asked Mr. Collins if anyone capable of determining the differences of strata in the affected and normal spots had made an examination, and the answer was always the same.

I have never seen greater exasperation over a malady than was in evidence here among the stricken owners. In one vineyard an attempt to replant had been made, and it was from the three-year-old replants that I was able to judge that the difficulties might be mitigated by different treatment of the subsoils. To determine this it would require an investigation covering a series of years. In some cases these replants had grown to great normal vines; in other cases the malady had caught them last year and the vines were going the way of their predecessors.

It is not necessary in this report to set forth the extent of this new trouble. I only spent one day in the affected territory, but saw no end of it later in the day. It is spreading in every vineyard where it has appeared and the growers are compelled to watch their splendid vines disappear with no studied attempt being made to find out the cause responsible for the losses.

I made these people no promises that the Viticultural Commission would try to induce a thorough examination of these conditions, but I asked them enough questions to set them groping for some way out of their troubles. Nor do I say that a systematic and continued investigation would finally bring relief. But I do hold that it is a shame that these great and profitable properties should be allowed to perish without a hand being turned by our investigational authorities who are equipped now with all the money necessary for such work. And the intense feeling against the University can be removed in this district by no other means than a thorough study of the trouble. If the Viticultural Commission could bring about such an investigation it would have the greatest credit for so doing and would be promoting a service that seems impossible to bring about in any other way.

Respectfully submitted.

(Signed) J. W. JEFFREY.

Our secretary, in company with J. W. Jeffrey, ex state horticultural commissioner, and Professors Frederic T. Bioletti and Ralph Smith, of the University of California, made a three-days trip into the afflicted section the latter part of October of this year, and together with the county horticultural commissioner and vineyardists there made an inspection of a number of the affected properties. Samples of soil were taken, as well as samples of fungus growth, and this office is now waiting a report from the laboratory of the University in the hope that some light may be thrown on the trouble. It is the consensus of opinion that the proper observation and experimental work can not be pursued unless we put a special man into that field to remain on the ground for several months and to conduct daily investigations with a view to closely following the work of experimentation.

Your board, because of its very limited appropriation, is appealing to the University and to the Department of Agriculture at Washington, D. C., for financial assistance, but has rather despaired of any immediate aid in that direction, the excuse being that appropriations in these departments have been either expended or apportioned. The need of prompt work, however, is so apparent that this board proposes to curtail and make sacrifices in other directions in order not to disappoint these table and raisin grape growers. We have already charted and tagged a number of diseased areas in the two districts above mentioned, and we contemplate sending a special expert into the territory in the very near future at our own expense to work out the salvation of these vineyards, if it is possible to do so. We are promised the hearty cooperation of boards of supervisors in the diseased area, and if it is found necessary, we propose to spend as much as $2,000 conducting an intelligent and practical plan of relief work among these particular vineyards. It is useless to make visits to such sections and pass opinions. Usually nothing comes of that plan of procedure. The better idea is to work with the farmers and watch the progress of affairs from day to day throughout the entire season, taking part in the plowing, cultivating, irrigating, fertilizing and pruning operations and trying different methods in different diseased areas.

The county horticultural commissioner of Tulare County reports that the growers are enthusiastic over the proposal of this board, and they believe that something at least may be accomplished. If not, it will not be for lack of honest effort.

We should add in conclusion that hundreds of other matters of detail have required the attention of the board and its office in Sacramento, and advice and help have been offered in many directions and for the general good of the industry.

Attached to this report is a financial statement signed by the treasurer of the board showing expenditures of appropriation moneys by classification. Our books have been regularly experted by officials of the State Board of Control, and in all instances our accounts have been found absolutely correct. If greater detail in classification of expenditures is required we would refer to financial transcripts from our books in possession of the State Board of Control.

Respectfully submitted.

STATE BOARD OF VITICULTURAL COMMISSIONERS,

C. J. Wetmore, President.
E. M. Sheehan, Secretary.

Dated: Sacramento, California, December 1, 1916.

Statement of Disbursements, September 4, 1913, to December 1, 1916.

	Chapter 196, 1913; account sixty-fifth fiscal year	Chapter 196, 1913; account sixty-sixth fiscal year	Total account sixty-fifth and sixty-sixth fiscal years
Salary, secretary	$1,980 00	$2,400 00	$4,380 00
Salary, stenographer	740 00	1,232 50	1,972 50
Salary, vineyard inspector	335 00	650 00	985 00
Salary, porter	98 65	77 00	175 65
Traveling expense—			
Meetings	839 21	391 90	1,231 11
Viticultural expert	240 62	460 56	761 18
Lectures	67 20	77 50	144 70
Theater and hall expense	7 75	2 50	10 25
Rent of halls	172 50	50 00	222 50
Lecturers' fees	400 00		400 00
Moving picture films and service	28 00	131 70	159 70
Advertising	127 24		127 24
Postage	254 95	350 00	604 95
Telephone and telegraph	39 90	69 34	109 24
Express, freight and cartage	2 20	9 06	11 26
Printing and purchase of bulletins, reports, etc.	36 18	103 34	139 52
Stationery and general printing	168 43	111 91	280 34
General office expense	36 25	67 00	103 25
Miscellaneous	130 50	70 70	201 20
Space at Panama-Pacific International Exposition		1,000 00	1,000 00
Totals	$5,704 58	$7,255 01	$12,959 59
Appropriations	7,500 00	7,500 00	15,000 00
Balance unexpended account sixty-fifth and sixty-sixth fiscal years			$2,040 41

Statement of Disbursements, September 4, 1913, to December 1, 1916—Continued.

	Chapter 393, 1915; account sixty-seventh fiscal year	Chapter 393, 1915; account sixty-eighth fiscal year to Dec. 1, 1916	Total account sixty-seventh and sixty-eighth fiscal years to Dec. 1, 1916
Salary, secretary	$2,400 00	$1,000 00	$3,400 00
Salary, stenographer	1,254 84	554 84	1,809 68
Salary, viticultural expert	650 70	289 28	939 98
Salary, porter	90 00	50 00	140 00
Traveling expense—			
Meetings	573 11	40 60	613 71
Viticultural expert	585 47	248 45	833 92
Secretary, special	339 95	10 00	349 95
Lecturers	68 86	----------	68 86
Theater and hall expense	5 00	----------	5 00
Moving picture films and service	75 00	----------	75 00
Advertising	3 50	----------	3 50
Postage	210 00	40 00	250 00
Telephone and telegraph	318 09	225 34	543 43
Express and freight	1 44	----------	1 44
Printing and purchase of bulletins, reports, etc.	384 83	----------	384 83
Stationery and general printing	158 69	2 05	160 74
General office expense	107 50	27 84	135 14
Miscellaneous	----------	31 00	31 00
Totals	$7,226 78	$2,519 40	$9,746 18
Appropriations	7,500 00	7,500 00	15,000 00
Balance unexpended account sixty-seventh and sixty-eighth fiscal years, to December 1, 1916	----------	----------	$5,253 82

STATE BOARD OF VITICULTURAL COMMISIONERS,
H. F. STOLL, Treasurer.

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Eleventh Biennial Report

OF THE

STATE DAIRY BUREAU

TO THE

Governor of the State of California

1915-1916

CALIFORNIA STATE PRINTING OFFICE
SACRAMENTO
1916

27107

THE STATE DAIRY BUREAU.

Office: 268 Market Street, San Francisco.

M. T. FREITAS, *Chairman* ---------- San Rafael
J. R. MURPHY ---------- Fresno
E. P. NISSEN ---------- Ferndale

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H. P. BONNIKSON, D. V. M., *Chemist*, Berkeley.
JENNIE A. LOVE, *Clerk*, San Francisco.
MARIE G. McGRATH, *Stenographer*, San Francisco.

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James C. Andreason, Yuba City.
Hugh D. Cameron, Willows.
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Samuel E. Watson, Alameda.
Ira D. Whitaker, Fresno.
C. A. Peairs, Tulare.

LETTER OF TRANSMITTAL.

SAN FRANCISCO, December 1, 1916.

To His Excellency, HIRAM W. JOHNSON,
Governor of the State of California.

SIR: We have the honor to submit herewith for your consideration the eleventh biennial report of the State Dairy Bureau for the period ending November 30, 1916.

Respectfully, M. T. FREITAS,
Chairman.

F. W. ANDREASEN, Secretary.

INTRODUCTION.

LARGE DEMAND FOR CALIFORNIA DAIRY PRODUCTS.

The two years covered by this report have been prosperous to those connected with the dairy industry. There has been a great demand for California dairy products from Australia, New Zealand, the Eastern markets and from Europe. Owing to this great demand the market has been kept cleaned up during this period. About 4,000,000 pounds of butter were shipped to Australia and New Zealand during 1915 and about 2,000,000 pounds to England and the Eastern markets in the United States during 1916. Good markets for California butter are also being developed in China, Japan, the Philippine Islands and Java.

The success which the exporters of butter in this state have met with is largely due to the fact that nearly all of the cream used in its manufacture has been pasteurized. The result has been a much more uniform product. It has also been due to the efforts of the Wholesale Dairy Produce exchanges in California, which have brought about uniform packing and salting and the use of uniform containers. Also because they have fixed rigid standards for extras, allowing no butter to be sold as such unless the flavor is superb, the salt and color uniform, and the style of package in accordance with rules. Under conditions prevailing now, the exporters have been able to collect for transportation carload after carload of butter which would sell in any market as extra.

The average price for butter during the year ending September 30, 1916, was 27.39 cents. From Table No. 11 it will be seen that this is a little lower than the prices since the year 1906. At the time of writing, November 21st, the butter is rising in price owing to the scarcity, small supply in cold storage, and high prices in the Eastern states. Other years there had been considerable butter in cold storage at this time of the year, and when fresh butter became scarce this storage butter was thrown on the market to keep prices down; but owing to the low prices for fresh butter last year during October, November and December, the storage butter could not be sold in California and had to be shipped to other countries at a loss. This spring, merchants were afraid to put butter in cold storage, as it appeared that the people in the state would not buy it.

There are many types of cheese, like Parmesan, Edam and Swiss cheese, which were formerly imported from Europe, but the war has shut them off entirely. These types of cheese sold in this country at extravagant prices.

The supply from Europe being nearly exhausted sometime ago some enterprising cheese makers who are familiar with the process of making these types of cheese have built large factories and hope to have a ready sale for the product in this country. One large factory, making Parmesan cheese, is running at full capacity in Sonoma County.

Cheese has been sold at a fair average price (15.54 cents per pound) during the year ending September 30, 1916. As may be seen from Table No. 11 this is just about an average of the prices obtained for it during the last ten years.

It has been demonstrated that a Cheddar type of cheese of the finest quality can be made in California, but most of the cheese made in this state is made for immediate consumption and is not suitable for exportation. There are, however, some factories in California that make cheese by the same process as is used in Oregon, Wisconsin and New York and the quality of some of these brands is equal to any cheese made in the above-named states.

There is a large demand for cheese made by the Cheddar process and good markets are open to the California cheese maker in Central and South America, in the Hawaiian and Philippine islands and in the Orient, if the factories will turn out the cheese suitable for exportation and of the quality demanded by the countries named. Short courses in cheese making are given at the University Farm at Davis and the cheese makers should avail themselves of the opportunity.

The manufacturers of condensed and evaporated milk in California (as well as those in other states in the Union) labored under difficulties when their products were placed on the free list. As soon as this law took effect the canned milk commenced to pour into the United States from nearly every milk producing country in Europe, with the result that milk which had been selling for about $3.50 per case of 48 sixteen ounce cans gradually dropped to from $2.70 to $2.95 per case. The manufacturers were selling the milk at a loss and some of them had to stop manufacturing for awhile. It was not surprising that they could not compete with manufacturers in Europe whose factories are mostly situated at seaports or on inland waterways, and who can buy the raw milk cheaply from farmers, where only about $8.00 per month and board is paid to the milkers, as compared with $40.00 per month and board in California.

There is still some evaporated milk shipped to this country from Denmark and Holland at this time, although it could be sold in Europe at much higher prices than it brings here. This must be done either to fill contracts entered into before the European war or to retain trade established in this country on certain European brands. Exportation of this product, however, is much greater than importation and large shipments of canned milk which would have come to California from the Eastern states, had it not been for the European war, are now going to Europe.

During the last few weeks the price on evaporated milk has advanced and it is now selling for about 30 to 40 cents per case of 48 sixteen ounce cans more than it was selling for at the time the law took effect which placed it on the free list. This raise has been due to the advanced price on tin-plate, on which there is a duty. The material for 48 cans (enough for one case) costs 35 cents more than formerly. It is peculiar that there is an import duty on tin plate, which the producer of evaporated milk must use in the manufacture of tin cans, but the manufactured tin cans containing the European milk comes in to this country free of charge.

MILK HAS NOT ADVANCED IN PRICE LIKE OTHER FOOD PRODUCTS.

Milk is a well-balanced, nutritious food and contains the chief parts of the different elements necessary to build up and sustain the body. Owing to the mild climate in California it is produced in such abundance and so cheaply that it has not advanced like other necessities of life during the last two years but is even sold at a lower price in some localities than former years.

For instance, in San Francisco milk was delivered at railroad terminals, a few years ago, by the producers for 18 cents per gallon, with the privilege that the amount delivered could exceed the amount contracted for, 5 per cent during the season of the year when milk was most plentiful and with the guarantee that it should never fall 5 per cent below the said amount during time of scarcity. From June 1, 1913, to May 31, 1915, the milk was delivered in San Francisco for 17 cents per gallon with similar privilege and guarantee of delivery during seasons of plenty and scarcity. Since June 1, 1915, the average price paid to the producer for milk, delivered at the railroad terminals in San Francisco, has been 16½ cents per gallon, with the privilege of delivering 5 per cent more than the contracted amount at the season of the greatest production and with a guarantee that the contracted amount should be delivered regularly within 5 per cent during the season of lowest production.

The quality of milk has been greatly improved during the last few years; while the chemical standards have not been raised by law, the compliance with the requirements have been more rigidly enforced. The conditions under which the milk is being produced are also being greatly improved. The old shacks formerly used as dairy buildings are being replaced by modern buildings with concrete floors, good drainage, and with excellent provisions for light and ventilation. The dairies are also being more regularly inspected and many new pasteurizing plants equipped with recording thermometers have been established.

To enforce the milk law, which took effect October 1, 1916, many of the large cities of this state have increased their force of inspectors and improved their laboratories which are used in the examination of milk and milk products to determine its purity and wholesomeness.

NUTRITIVE VALUE OF DAIRY PRODUCTS.

In Farmers Bulletin No. 363, issued by the United States Department of Agriculture, attention is called to the nutritive value of dairy products and to the fact that milk contains all the ingredients necessary for the building and repair of the body and for supplying it with energy, also that about 99 per cent of the nutrients of milk are made available for the use of the body by the digestive organs of a healthy person when it is taken with other food.

The Metropolitan Life Insurance Company has, for the benefit of its policyholders, printed and distributed a bulletin written by Dr. Milton J. Rosenau, in which it is shown that one quart of milk is about equal in food value to any one of the following: Two pounds of salt codfish, three pounds of fresh codfish, two pounds of chicken, four pounds of beets, five pounds of turnips, one-sixth of a pound of butter, one-third of a pound of wheat flour, one-third of a pound of cheese, three-quarters of a pound of lean round beef, eight eggs, two pounds of potatoes, six pounds of spinach, seven pounds of lettuce, or four pounds of cabbage.

From the above it will be seen that it is not only the price of market milk which has remained the same during these years of war in Europe but that all milk products have, at least up to September 30th (the end of the statistical year), been sold at an average or less than an average price of the nine previous years.

THE CALVES SHOULD ALL BE RAISED.

Every dairyman should raise the heifer calves so that he can select and retain the best for the upkeep and the improving of his herd, and if he has the pasture to spare, he should also raise the steer calves which could not be sold for veal. Beef has been a good price for years and there is no danger that prices will ever be low, since many of the countries which formerly exported beef can now use all of it at home.

The dairyman who sells or kills his heifer calves and buys cows to keep up or increase his herd will usually find that some of the cows he bought were diseased and have spread this disease to a large per cent of his herd, while the dairyman who raises his own stock is usually found to have cattle free from disease.

MEETINGS OF THE MEMBERS OF THE DAIRY BUREAU—WHEN HELD.

Regular meetings are held by the members of the bureau on the second Wednesday of January, April, July and October, at which meetings the members pass upon the actions of its employees and direct the policy and work of the bureau.

NEED OF MORE INSPECTORS.

In 1899 the legislature passed an act providing for the inspection of dairies and authorized the State Dairy Bureau to appoint from time to time as many assistants as in its judgment might be required to enforce the dairy laws. The number, however, was not to exceed twenty. Sufficient money has never been provided, however, to maintain more than half of that force.

INSPECTION OF DAIRIES.

During the period intervening since the last report was submitted four of the inspectors, Messrs. J. S. Canham, James Smith, L. H. Pfitzer, and H. T. Nye, have left the service, three of them because their health would no longer permit them to travel over the rough roads in all kinds of weather, and one, Mr. H. T. Nye, accepted a position with one of the large creameries. To fill the vacancies created by their resignations Messrs. Maurice E. Coulter, J. H. Severin, Ira D. Whitaker, H. D. Cameron and Arthur W. Sloan, who successfully passed the civil service examination held in April, 1914, have been appointed.

Because of the frequent changes of inspectors during the past two years it has been necessary to rearrange the districts. The present force of inspectors are working in the following districts, viz:

JAMES C. ANDREASON, Yuba City.—Modoc, Lassen, Plumas, Butte, Sierra, Nevada, Placer, Yuba and Sutter counties.

HUGH D. CAMERON, Willows.—Siskiyou, Shasta, Tehama, Glenn and Colusa counties.

MAURICE E. COULTER, Watsonville.—San Mateo, Santa Clara, Santa Cruz, San Benito and Monterey counties.

RAY HASSON, Hollywood.—Los Angeles, San Bernardino, Orange, Riverside, San Diego and Imperial counties.

JOHN P. HYNDING, Eureka.—Del Norte, Humboldt, Mendocino, Trinity and Lake counties.

C. A. PEAIRS, Tulare.—Tulare County.

J. H. SEVERIN, Oakland.—Solano, Yolo, Sacramento, San Joaquin and El Dorado counties.

A. W. SLOAN, Santa Barbara.—San Luis Obispo, Santa Barbara and Ventura counties.

C. A. STARKWEATHER, Modesto.—Stanislaus, Merced and Madera counties.

SAMUEL E. WATSON, Alameda.—Sonoma, Napa, Marin, Contra Costa and Alameda counties.

IRA D. WHITAKER, Fresno.—Fresno, Kings, Kern and Inyo counties.

During the two years covered by this report the inspectors of this bureau have made 29,876 inspections of dairies and factories of dairy products and have collected for examination 3,046 samples of milk and other dairy products. Since October 1st of this year the inspectors have been engaged most of the time in enforcing the new milk law, which took effect on that date.

Among the dairies inspected since October 1st of this year, 1,086 of those selling market milk had not complied with the new milk law, either to make application to the State Veterinarian to have their cows tested for tuberculosis or to pasteurize the milk. The inspectors had them mail their applications immediately.

SCORE CARD SYSTEM.

The score card system for the inspection of dairies and factories of dairy products was adopted by the State Dairy Bureau in 1895. Since that time the form of the card has been changed several times.

Score cards are now found indispensable by every dairy inspection department. They are necessary for the inspectors, as they remind them of nearly every detail which they should examine while at the factory or dairy. They are also convenient blanks on which to report the condition in which the dairy or factory was found at the time of inspection. When these cards are filed alphabetically in the office, information as to the condition of the dairy or factory, at the time of each inspection, can be obtained in a few minutes and the records will show whether conditions are improving or retrograding. They are also of educational value, as the operator of the place can see where he can make improvements which will increase the score.

The following are copies of the score cards now used by the State Dairy Bureau.

DAIRY FARM SCORE CARD.

Equipment	Score	
	Perfect.	Allowed.
COWS.		
Health	6	
Apparently in good health ---- 1		
If tested with tuberculin within a year and no tuberculosis is found, or if tested within six months and all reacting animals removed --- 5		
If tested within a year and reacting animals are found and removed ---- 3		
Food (clean and wholesome)	1	
Water (clean and fresh)	1	
STABLES.		
Location of stable	2	
Well drained ---- 1		
Free from contaminating surroundings ---- 1		
Construction of stable	4	
Tight, sound floor and proper gutter ---- 2		
Smooth, tight walls and ceiling ---- 1		
Proper stall, tie and manger -- 1		
Provisions for light: four square feet of glass per cow	4	
(Three square feet of glass or four square feet of opening, 3; two square feet of glass or three square feet of opening, 2; one square foot of glass, 1. Deduct for uneven distribution.)		
Bedding, or clean pasture for bed	1	
Ventilation	7	
Ventilators in roof ---- 2		
Windows hinged at bottom --- 2		
(Sliding windows, 1.5; other openings, 1.)		
Cubic feet of space per cow, 500 feet ---- 3		
(Less than 500 feet, 2; less than 400 feet, 1; less than 300 feet, 0.)		
UTENSILS.		
Construction and condition of utensils	1	
Water for cleaning	1	
(Clean, convenient and abundant.)		
Small-top milking pail	5	
Milk cooler	1	
Clean milking suits	1	
MILK ROOM OR MILK HOUSE.		
Location: Free from contaminating surroundings	1	
Construction of milk room	2	
Floor, walls, and ceiling ---- 1		
Light, ventilation, screens ---- 1		
Separate rooms for washing utensils and handling milk	1	
Facilities for steam	1	
(Hot water, 0.5.)		
Total	40	

Methods	Score	
	Perfect.	Allowed.
COWS.		
Clean	8	
(Free from visible dirt, 6.)		
STABLES.		
Cleanliness of stables	6	
Floor ---- 2		
Walls ---- 1		
Ceiling and ledges ---- 1		
Mangers and partitions ---- 1		
Windows ---- 1		
Stable air at milking time	5	
Freedom from dust ---- 3		
Freedom from odors ---- 2		
Cleanliness of bedding	1	
Barnyard	2	
Clean ---- 1		
Well drained ---- 1		
Removal of manure daily to 50 feet from stable	2	
MILK ROOM OR MILK HOUSE.		
Cleanliness of milk room	3	
UTENSILS AND MILKING.		
Care and cleanliness of utensils	8	
Thoroughly washed ---- 2		
Sterilized in steam for 15 minutes ---- 3		
(Placed over steam jet, or scalded with boiling water, 2.)		
Protected from contamination 3		
Cleanliness of milking	9	
Clean, dry hands ---- 3		
Udders washed and wiped ---- 6		
(Udders cleaned with moist cloth, 4; cleaned with dry cloth or brush at least 15 minutes before milking, 1.)		
HANDLING THE MILK.		
Cleanliness of attendants in milk room	2	
Milk removed immediately from stable without pouring from pail	2	
Cooled immediately after milking each cow	2	
Cooled below 50° F.	5	
(51° to 55°, 4; 56° to 60°, 2.)		
Stored below 50° F.	3	
(51° to 55°, 2; 56° to 60°, 1.)		
Transportation below 50° F.	2	
(51° to 55°, 1.5; 56° to 60°, 1.)		
(If delivered twice a day, allow perfect score for storage and transportation.)		
Total	60	
Deducted for—		
Very filthy utensils		
Very filthy milk room		
Equipment+Methods=Final Score.		

CITY MILK PLANT SCORE CARD.

Equipment		Score: Perfect.	Score: Allowed
Building:			
Location: Free from contaminating surroundings		2	------
Arrangement		7	------
Separate receiving room	1		
Separate handling room	2		
Separate wash room	1		
Separate sales room	1		
Separate boiler room	1		
Separate refrigerator room	1		
Construction		12	------
Floors, tight, sound, cleanable	2		
Walls, tight, smooth, cleanable	1		
Ceiling, smooth, tight, cleanable	1		
Drainage	2		
Floors	1		
Sewer or septic tank	1		
Provision for light (10 per cent of floor space.)	2		
Provision for pure air	2		
Screens	1		
Minimum of shafting, pulleys, hangers, exposed pipes, etc.	1		
Apparatus		15	------
Boiler (Water heater, 1.)	2		
Appliances for cleansing utensils and bottles	2		
Sterilizers for bottles, etc.	2		
Bottling machine	1		
Capping machine	1		
Wash bowl, soap, and towel in handling room	1		
Condition	6		
Milk-handling machinery	3		
Pipes, couplings, and pumps	2		
Cans	1		
Laboratory and equipment		2	------
Water supply		2	------
Clean and fresh	1		
Convenient and abundant	1		
Total		40	------

Methods		Score: Perfect.	Score: Allowed
Building		14	------
Cleanliness:			
Floors	3		
Walls	2		
Ceilings	2		
Doors and windows	1		
Shafting, pulleys, pipes, etc.	1		
Freedom from odors	2		
Freedom from flies	3		
Apparatus		7	------
Cleanliness:			
Thoroughly washed and rinsed	3		
Milk-handling machinery	2		
Pipes, cans, etc.	1		
Sterilized with live steam	3		
Milk-handling machinery	2		
Pipes, cans, etc.	1		
Protected from contamination	1		
Bottles		7	------
Thoroughly washed and rinsed	3		
Sterilized with steam 15 minutes	3		
Inverted in clean place	1		
Handling milk		22	------
Received below 50° F. (50° to 55°, 2.) (55° to 60°, 1.)	3		
Rapidity of handling	2		
Freedom from undue exposure to air	2		
Cooling	5		
Promptness	2		
Below 45° F. (45° to 50°, 1.)	3		
Capping bottles by machine	2		
Bottle top protected by cover	1		
Storage; below 45° F. (45° to 50°, 3; 50° to 55°, 1.)	4		
Protection during delivery (Iced in summer.)	2		
Bottle caps sterilized	1		
Inspection		6	------
Bacteriological work	3		
Inspection of dairies supplying milk (2 times a year, 2; once a year, 1.)	3		
Miscellaneous		4	------
Cleanliness of attendants (Personal cleanliness, 1; clean, washable clothing, 1.)	2		
Cleanliness of delivery outfit	2		
Total		60	------
Equipment + Methods = Total score.			

NOTE.—If the conditions in any particular are so exceptionally bad as to be inadequately expressed by a score of "0" the inspector can make a deduction from the total score.

FACTORY SCORE CARD.

DATE ------------------------------

NAME ------------------ P. O. ------------------ COUNTY ------------------

Equipment		Score	
		Perfect.	Allowed
Building:			
Location: Free from contaminating surrounding		3	------
Arrangements		7	------
Proper rooms	4		
Convenient	3		
Construction		10	------
Flooring, tight, sound and cleanable	4		
Walls, tight, smooth and cleanable	2		
Ceiling, tight, smooth and cleanable	2		
Minimum of shafting, pulleys, hangers and exposed pipes	2		
Drainage		4	------
Floor	2		
Sewer or septic tank	2		
Apparatus		12	------
Condition of	5		
Boiler, condition of	2		
Appliances for cleaning utensils and cans	5		
Testing rooms and equipment		2	------
Water supply		2	------
Clean and fresh	1		
Convenient and abundant	1		
Total		40	------

Methods		Score	
		Perfect.	Allowed
Building:			
Cleanliness		19	------
Orderly	4		
Floors	3		
Walls	2		
Ceilings	2		
Doors and windows	2		
Shafting, pulleys and pipes, etc.	1		
Freedom from odors	2		
Freedom from flies	3		
Utensils:			
Cleanliness		12	------
Thoroughly washed and rinsed	6		
Sterilized with live steam (Boiling water, 4.)	6		
Cutting and packing room		14	------
Cleanliness of room	6		
of table	2		
of cutters	2		
of moulds	2		
of cubes and boxes	2		
If cheese factory—			
Cleanliness of curing room	7		
of shelves	7		
Machinery		5	------
Cleanliness of	3		
Skimmilk, whey and buttermilk vats	1		
Pumps and pipes	1		
Cleanliness of employees		10	------
Total		60	------

The dairy farm score card and the milk plant score card are those adopted by the Bureau of Animal Industry, United States Department of Agriculture, with slight changes made in the former in regard to light, ventilation and control of temperature in the milking barn, to suit climatic conditions in this state.

Below are instructions for the use of the dairy farm score card.

RULES FOR USING DAIRY FARM SCORE CARD.

HEALTH 1.0.—Cut off 0.1 for each cow in a herd of 20, or less, that has any defect of health. Cut off 0.1 for every two cows in a herd of 40, or for each three cows in a herd of 60, or less, that has any defect of health. In case of open abcesses, retained after-birth, etc., in any cow in milking string, cut score to 0.5 and order cow removed from string.

FOOD 1.0.—When green beet pulp, musty hay, turnips or fermenting food is fed cut to 0.5 or less, according to condition of food.

WATER 1.0.—When green moss in any quantity is allowed to accumulate or where obtained from unclean source, give 0.5 or less.

STABLE—

Well drained 1.0.—When drained into irrigation system or covered cesspool, give 1.0. When sufficient and proper absorbent is placed in gutter to absorb urine give 1.0. When well-kept open flume drain on surface, give 0.5.

Free from contaminating surroundings.—When corral is next to milking shed and is not cleaned once a week, or is dusty and muddy, take off 0.5. When any part of paragraph (*c*), section 2 of law of 1911 is violated take off 0.5 or more.

Construction of stable.—When floor is of concrete with proper gutter and at least 4′ 4″ from gutter to wall, give 2. When space between gutter is less, deduct 0.2, or more. For tight wooden floor with concrete gutter give 1.25. For cracks in wooden floor take off 0.25 or more. For smooth and tight concrete walls and light-colored ceiling, give 1.0. For smooth wooden walls and light-colored ceiling give 0.75. For rough walls and no ceiling over head, give 0.5. For iron stanchion and concrete manger, give 1.0. For stanchions of dressed lumber and painted and concrete manger, give 0.9. For stanchions of dressed lumber and painted, with wooden manger, give 0.75. For rough wooden stanchions and wooden manger, give 0.5.

Provisions for light.—Give as directed on card. Make no allowance for doors or cracks.

Bedding.—For clean bedding, or clean pasture to rest on, give 1.0; for dirty or no bedding to rest on, or where kept in a dirty yard, give 0.5 or less.

Ventilation.—Give as directed on card. Make no allowance for doors or cracks.

UTENSILS.—When seams are fully soldered, with no rough places in them, give 1.0. When seams are broken or rusty in spots give 0.75, or less. Water to be packed in buckets from clean source, give 0.75. Water for cleaning piped to sink from clean source, give 1.0. Water in kitchen give 0.25. Water from doubtful source give 0.25 to 0.0. Small topped milking pail for all the milkers and all used at each milking, give 5.0. Deduct in proportion for any milker not using small top milking pail. Milk cooler sufficient for volume of milk or cream, give 1.0. Deduct according to insufficiency or when not used every milking or time of skimming. Clean white milking suit and cap, give 1.0. Clean colored milking suit, kept in closet for that purpose and used only when milking, give 0.8. If not kept in closet give 0.75. Dirty milking suit, give 0.25 to 0.0.

Milk Room or Milk House.—Free from contaminating surroundings, give 1.0. Where any part of paragraph (*c*), section 2, of law of 1911, is violated, give 0. Where corral is close to milk room and is not cleaned once a week, or where it is dusty, give 0.5. Where too far from milking shed to take milk when bucket is full, give 0.5.

Construction of Milk Room.—Where floor and walls are of concrete and ceiling plastered or ceiled with T. and G. and painted, give 1.0. For concrete floor with ceiled walls and ceiling and painted, give 0.9. Where floor is of wood but tight, and walls ceiled, give 0.7. Where walls and ceiling are rough but floor of concrete, give 0.6 or less. Where floor is of wood and walls and ceiling rough, give 0.5 or less. For glass windows in opposite or adjacent walls with hinged screens, screen door and vent through roof give 1.0. If there is no vent, deduct 0.1. For one window without hinged screens, give 0.5. For separate room for washing utensils, give 1.0. For steam and sterilizing cabinet holding a good portion of all utensils give 1.0. For steam without cabinet, give 0.75. For hot water in milk house or in shed adjoining, give 0.5. For hot water in kitchen give 0.

METHODS.

COWS CLEAN.—When cows are brushed clean and udders clipped, give 8.0. When free from visible dirt, give 6.0. When soiled with dirt or manure, give 0.5 to 0.

STABLE—

Cleaning of Stable.—When floor is washed give 2.0. When floor is swept with broom give 1.5. When cleaned with shovel, give 1.0. Worse than this, give 0. Walls clean give 1.0. When spattered with manure or other dirt, give 0.75 to 0. When ceiling and ledges are clean give 1.0; deduct from this according to amount of dirt or dust. Where manger and partitions are clean and hosed down, give 1.0. Where swept clean, give 0.75. Where beet pulp or ground feed is fed and not swept or hosed down, give 0.5 to 0. Where windows are clean give 1.0; deduct according to condition. Where there are no windows make no allowance.

Stable Air at Milking Time.—Where no hay or other material is stored in milking shed or in loft above, no strong odor noticeable on entering the building, give 5.0. Where hay is fed at time of milking or within one hour previous, deduct 1.0. Where strong scented roots or other food is fed at milking time, deduct 1.0. Where stable is dusty, depending upon degree, give 3.0 to 0. When there are holes in the floor or gutter, allowing the urine to leak through, give from 3.0 to 0.

Cleanliness of Bedding.—Where cows are allowed to rest on clean sod, or clean bedding, give 1.0. Where cows are kept in dusty yard or lot, give 0.5 to 0.

Barnyard.—Where well drained, smooth, dry and cleaned every day, give 2. When hard, and dry and cleaned once a week, give 1.5. When uneven, dusty, muddy or not cleaned once a week, give 1.0 to 0. When mud around gates, troughs, etc., cut 0.5.

Milk Room or Milk House.—When clean, airy and free from odor, give 3.0. When dried milk or sour milk is found on separator stand, walls, steps or platform, cut off 1.0 to 2.0. Where there are flies in the room cut off 0.5 to 2.0, depending upon number. When junk or unnecessary articles are stored in milk room, cut 0.5 to 2.0.

Utensils and Milking.—Thoroughly washed immediately after using, give 2.0. Sterilized with superheated steam for 15 minutes in sterilizing cabinet give 3.0. Where left unwashed for more than one hour after using, cut off 1.0 to 2.0. according to time. When boiling water is used and the kettle is not large enough to hold cooler, or the largest of the milk cans used, cut off 1.5. When protected from contamination in well ventilated room free from flies and dust and inverted on metal racks or where left in sterilizing cabinet, give 3.0. When placed outside of milk house and inverted on suitable racks, give 2.0 to 0, according to presence of flies, dust or other contaminating agents. When inverted on unsuitable racks deduct 0.5 or more.

Cleanliness of Milking.—Where hands are dry and clean, give 3.0. Where more than 5 cows are milked and no washstand, soap and proper towel is provided and convenient to the barn, cut off 1.0 or more, according to number of cows in string and condition of cows. Where milking suits are dirty cut 1.0.

Handling the Milk.—Where white suits reasonably clean are used, give 2.0. Where clean colored suits are used, give 1.5. Where attendants or suits are dirty, cut according to condition. Where apparatus or machinery is being repaired by attendants at times when milk is not handled, give benefit of the doubt if appearance is unfavorable. Where milk is removed from stable immediately without pouring from pail, give 2.0. Where one extra pail with cover is provided and kept 3 feet from floor, give 1.5. Where extra pails are without covers but kept 3 feet above floor, give 1.0. Where extra pails or cans are stood on floor in stable, give 0. Where cream is produced and the cans are placed outside of stable in a room screened to exclude flies, cats, chickens, etc., give 2.0 if milk is separated during milking time or immediately thereafter.

Cooling of Milk and Cream.—If cooled immediately after milking each cow, give 2.0. If cooled immediately after pail is full, give 1.5. Where milking machine is used and two cows are milked at one time, give 2.0 if cooled immediately. Where cream is produced and same is separated immediately after milking and cooled as it flows from the separator spout, give 2.0.

DAIRY BUILDINGS.

Hundreds of inquiries have been received at the office for plans of dairy buildings which would be approved by the State Dairy Bureau.

Through the courtesy of Dr. William C. Hassler, Health Officer of San Francisco, Dr. J. A. Woodside, Chief Meat and Milk Inspector of San Diego, and Prof. J. B. Davidson of the University Farm at Davis, California, a few plans of milking sheds and a milk or separator house have been obtained. A plan taken from Farmers Bulletin No. 689, by the United States Department of Agriculture, is also included.

Figure 1 is a plan for the framing of a milking shed, for one row of cows, such as is used in San Diego County and in other localities where the weather is very hot in the summer. The studs are 2 inches by 4 inches by 10 feet long, placed 4 feet on centers. The outside wall, on the south side, is boarded up about 4 feet. Below the plate the studding is covered with a 12 inch board. The remaining 5 feet is left open but covered with screen to keep flies and chickens out. The north side is boarded up to afford shelter from the north wind, with a window about 3 feet by 3 feet for every 10 feet of the building.

Figure 2 is the floor plan of the above-described building showing arrangement for mangers, stanchions and concrete floor.

Figure 3 is a milking shed similar to that shown in Figures 1 and 2, but for two rows of cows. The south side of the building is the same as the former, but on the north side there is a window about 3 feet by 3 feet for every 6 feet. This gives about 4 square feet of light to each cow on the north side of the shed.

The floor plan is the same as shown in Figure 2, except in that the building is made to accommodate two rows of cows with either the driveway or the feed alley about 12 feet and with the two rows of cows facing one another or with the cows facing the outside walls.

It is advisable to brace the frame work at each end of these buildings.

Figure 4 shows the interior of a milking shed for two rows of cows.

Figure 5 shows the north side and end elevation of a milk or separator house. The door is shown on the north side, which is a good plan, as not nearly so many flies will rest on it and be admitted to the room as would be the case if it was on the south side. It is planned that the windows should all be screened and hinged on the bottom so that they can be opened to afford ventilation by letting the top into the room.

Figure 6 shows the framework on the south side, also a drying bin, 4 feet, 5 inches by 3 feet, 5 inches, by 2 feet, 6 inches deep, in which to put the utensils. This bin must be screened and the utensils can be placed in it on racks away from flies and in the sun. It is convenient to the wash trays.

Figure 7 shows floor plan and general arrangement, also open drain and slope of floor. (See pages 18 to 24, inclusive).

The set of plans shown on pages 25 to 29, inclusive, are of a milk house designed by the Dairy Division of the United States Department of Agriculture.

Figure 8 is a floor plan of a milk house, showing general arrangement.

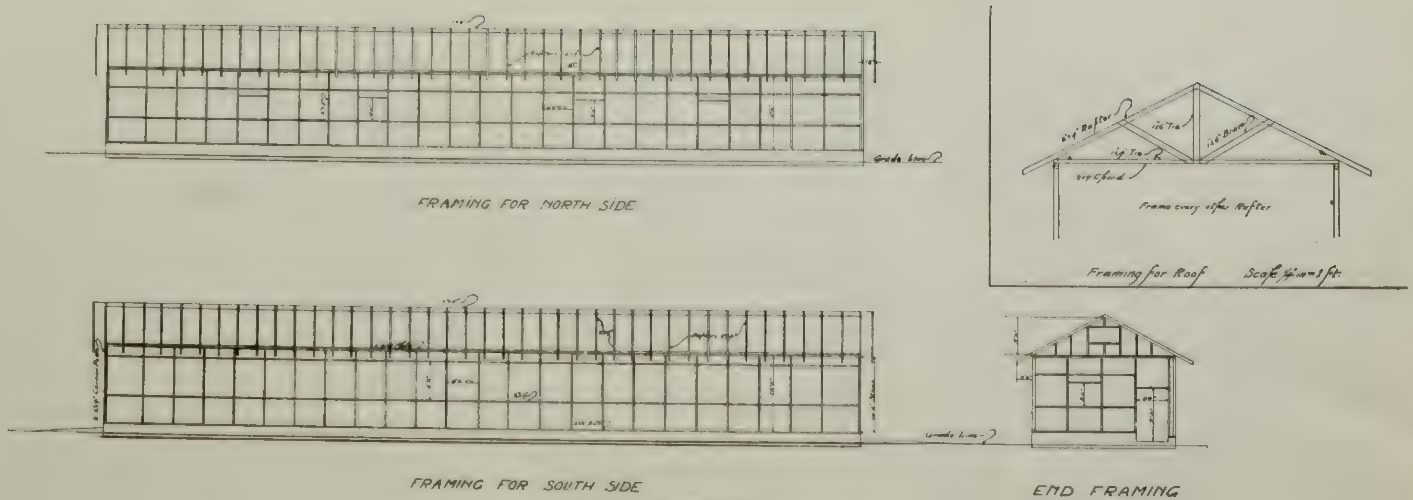
Figure 9 shows longitudinal section with sewer system, can racks and bracing.

Figure 10 shows cross section through dairy house, with cooling tank and overflow pipe, closet for milk samples and testing glassware, also concrete foundation.

Figure 11 shows front elevation and doors to milk room and wash room.

Figure 12 shows rear elevation of milk house, windows and ventilators.

Figure 13 shows end elevation.



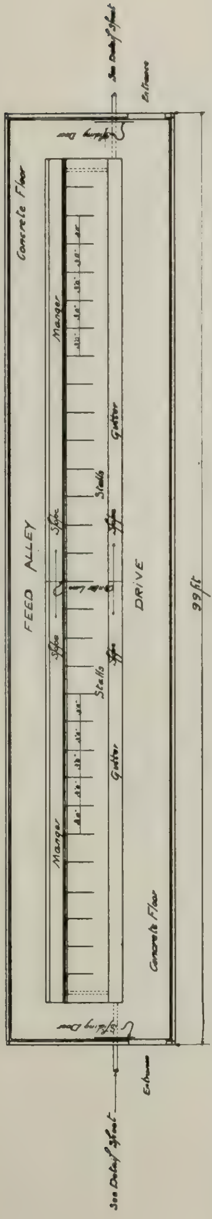
FRAMING FOR NORTH SIDE

Framing for Roof Scale 1/4 in = 1 ft.

FRAMING FOR SOUTH SIDE

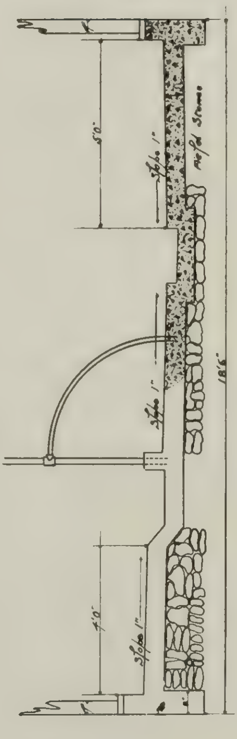
END FRAMING

FIGURE 1.



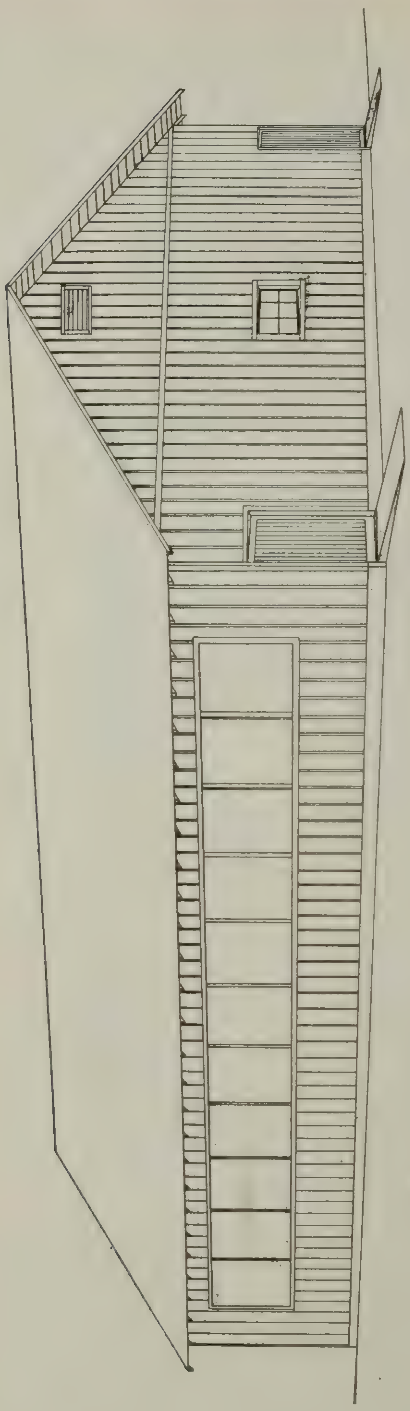
FLOOR PLAN
Scale 1/8 in = 1 ft

PROPORTIONS OF CONCRETE
1 Part of Cement
2 Parts of Sand
3 Parts of Broken Stone



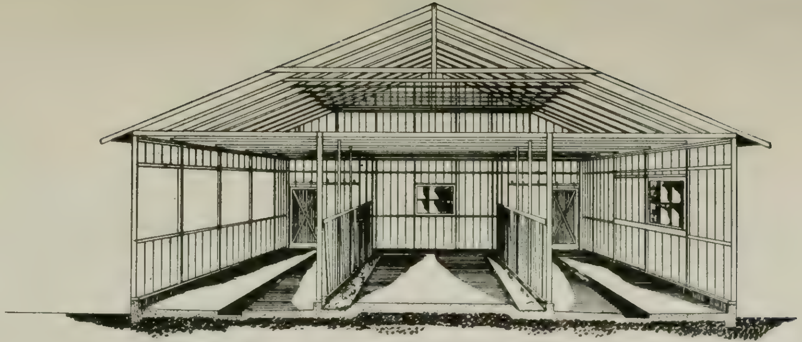
CROSS SECTION THRU. FLOOR

FIGURE 2.

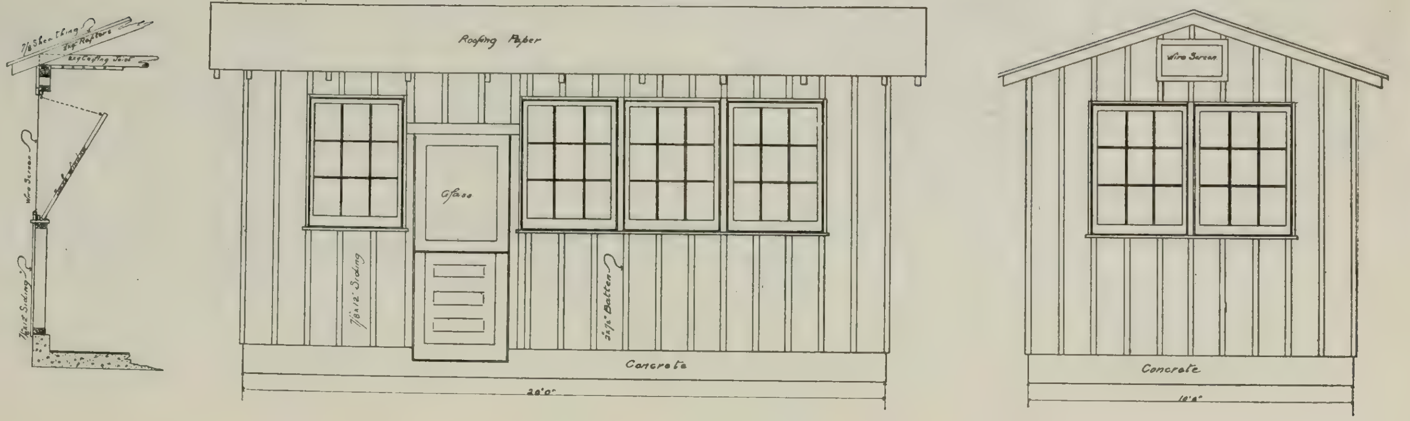


PERSPECTIVE

FIGURE 3.



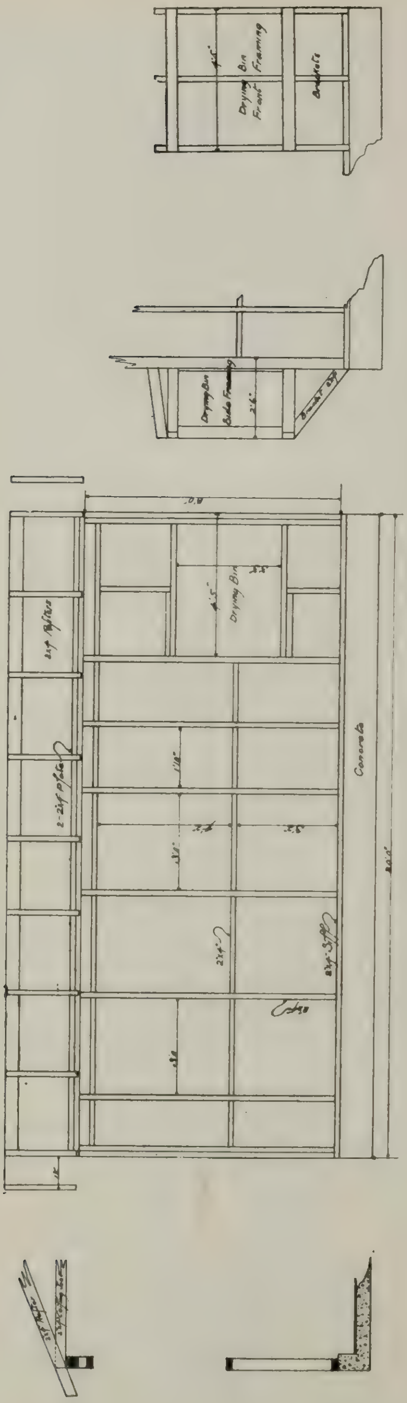
PERSPECTIVE
FIGURE 4.



North Side Elevation

Side Elevation

FIGURE 5.



South Side Framing

FIGURE 6.

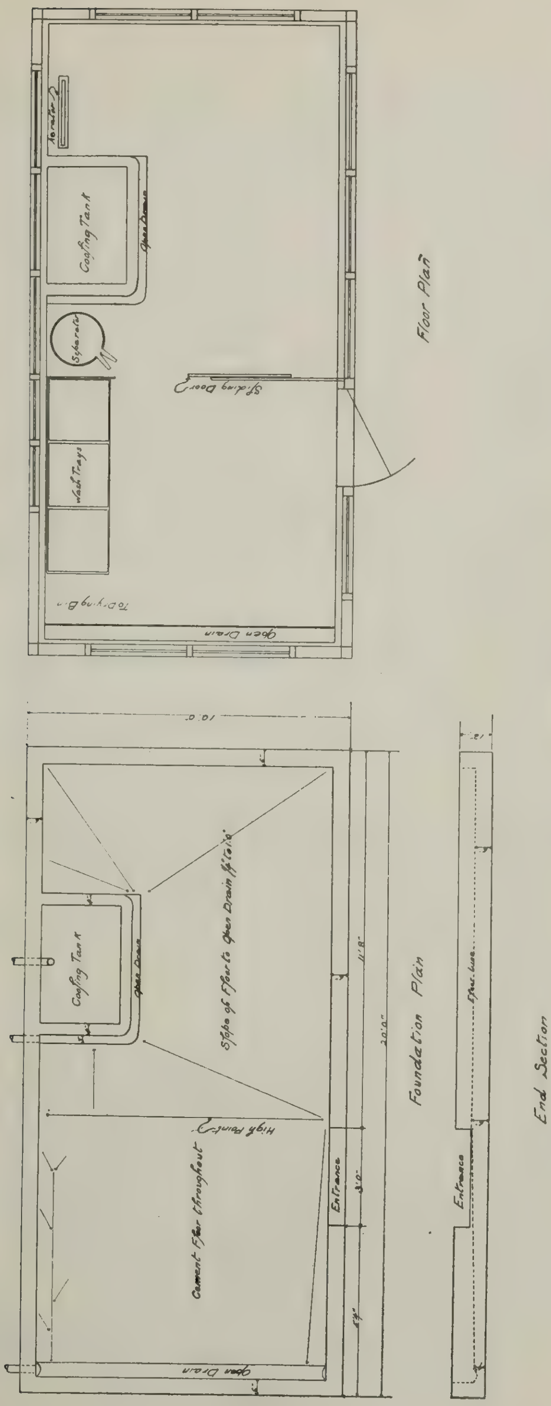

Aerator
Cooling Tank
Open Drain
Separator
Sliding Door
Wash Trays
To Drying R..
Open Drain
Floor Plan
10'0"
Cooling Tank
Open Drain
Slope of Floor to Open Drain 1/4" to 1'0"
High Point
Cement Floor throughout
Entrance
11'8"
20'0"
3'0"
5'4"
Open Drain
Foundation Plan
12"
Entrance
End Section

FIGURE 7.

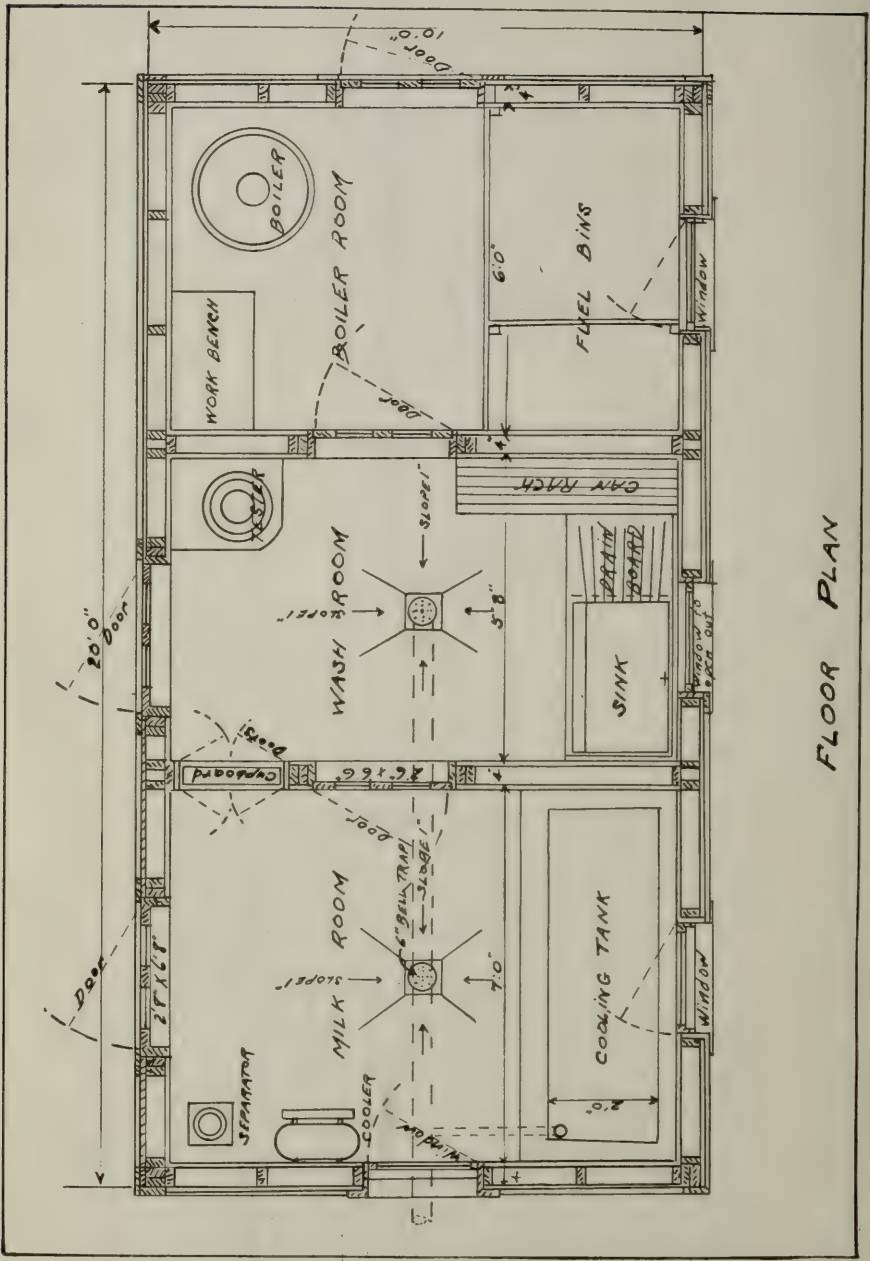

FLOOR PLAN
10'0"
20'0"
BOILER ROOM
BOILER
WORK BENCH
FUEL BINS
6'0"
4'
Door
Window
WASH ROOM
TESTER
CAN RACK
DRAIN BOARD
SINK
Window to open out
SLOPE 1"
5'8"
Doors
Cupboard
2'6"x6'6"
MILK ROOM
6" BELL TRAP
7'0"
2'8"x6'8"
SEPARATOR
COOLER
COOLING TANK
2'0"

FIGURE 8.

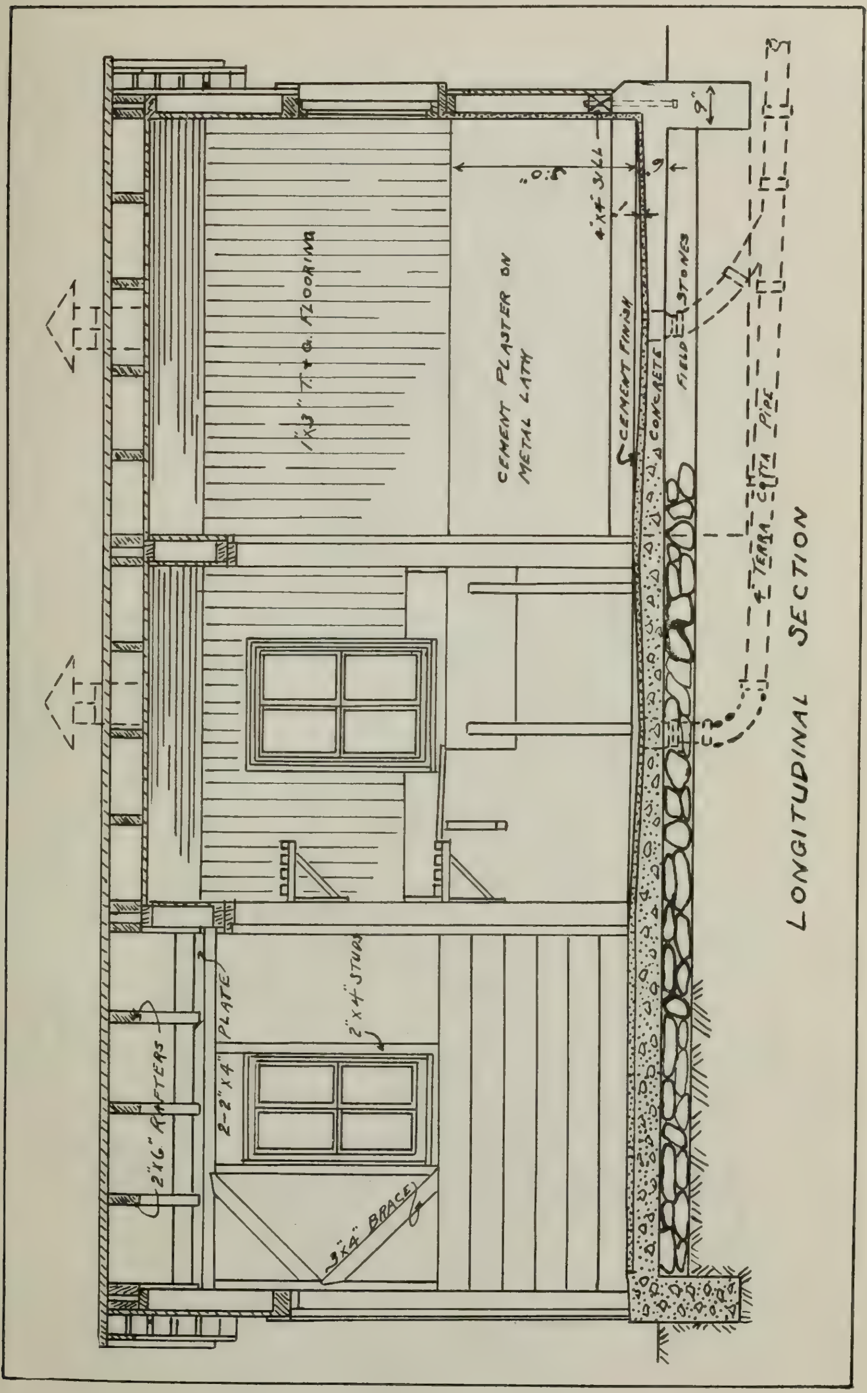

1"x3" T. & G. FLOORING
CEMENT PLASTER ON METAL LATH
6'0"
4"x4" SILL
6"
9"
CEMENT FINISH
CONCRETE
FIELD STONES
4" TERRA COTTA PIPE
LONGITUDINAL SECTION
2"x6" RAFTERS
2-2"x4" PLATE
2"x4" STUDS
3"x4" BRACE

FIGURE 9.

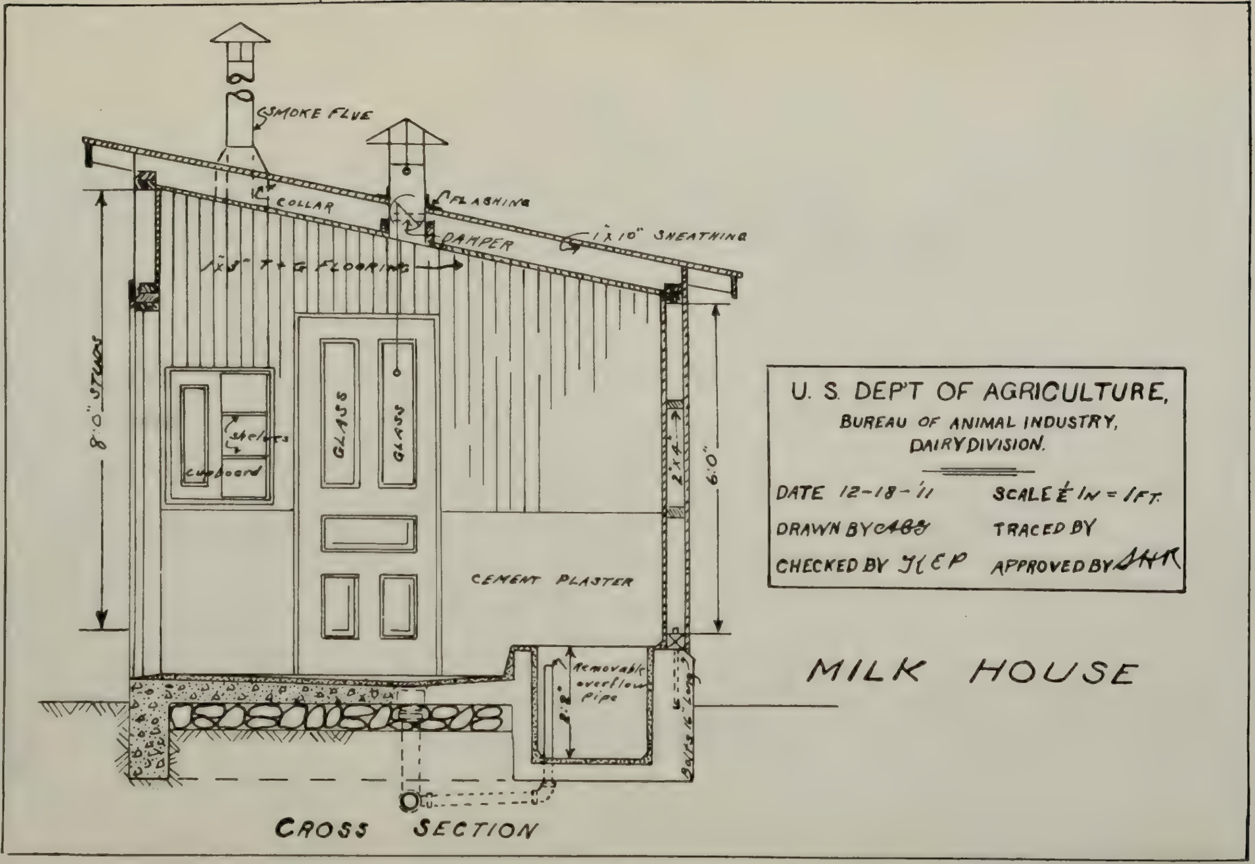

SMOKE FLUE
COLLAR
FLASHING
DAMPER
1"x10" SHEATHING
1"x3" T+G FLOORING
8'0" STUDS
shelves
cupboard
GLASS
GLASS
CEMENT PLASTER
2"x4"
6'0"
Removable overflow pipe
2'2"
Bolts 16" Long
U. S. DEP'T OF AGRICULTURE,
BUREAU OF ANIMAL INDUSTRY,
DAIRY DIVISION.
DATE 12-18-'11
SCALE ½ IN = 1 FT.
DRAWN BY ABS
TRACED BY
CHECKED BY JCEP
APPROVED BY SHR
MILK HOUSE
CROSS SECTION

FIGURE 10.

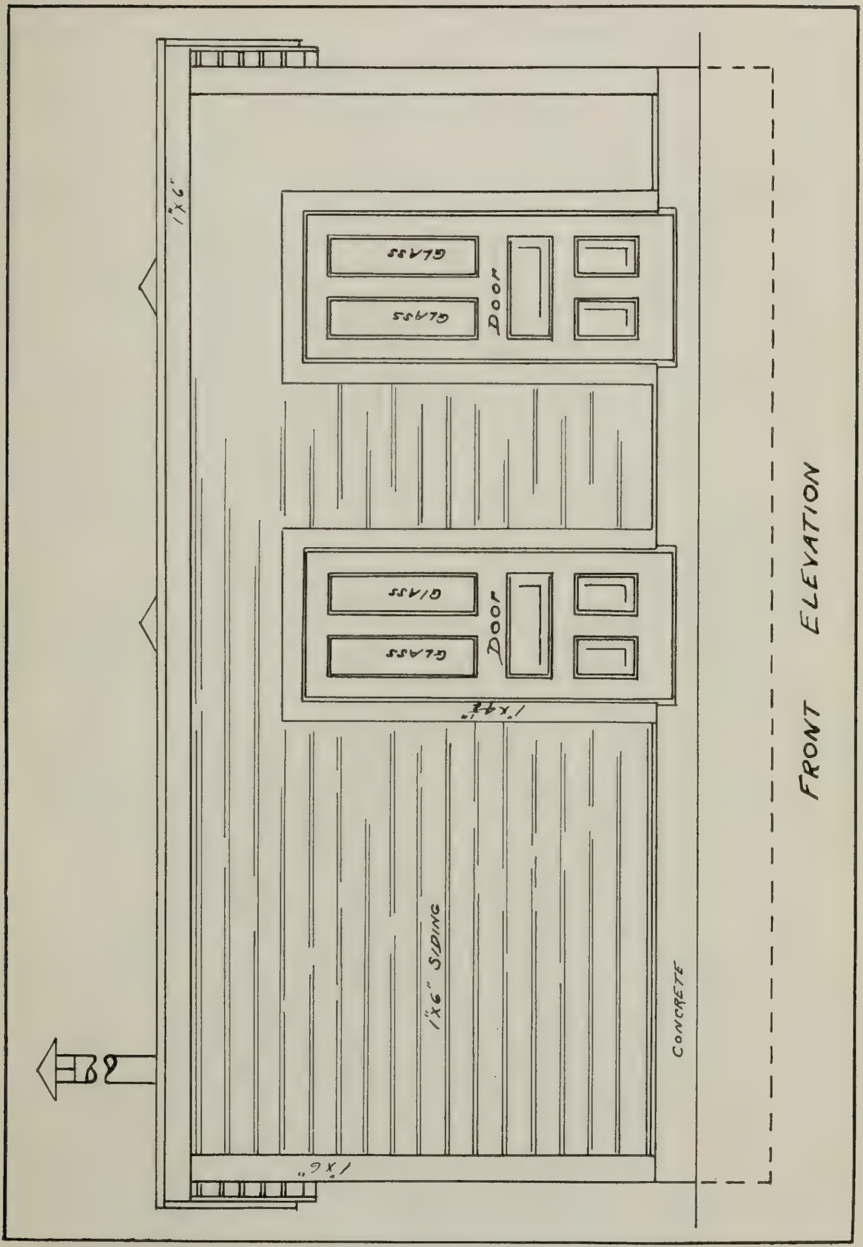

FRONT ELEVATION
1"x6"
GLASS
GLASS
DOOR
GLASS
GLASS
DOOR
1"x4½"
1"x6" SIDING
CONCRETE
1"x6"

FIGURE 11.

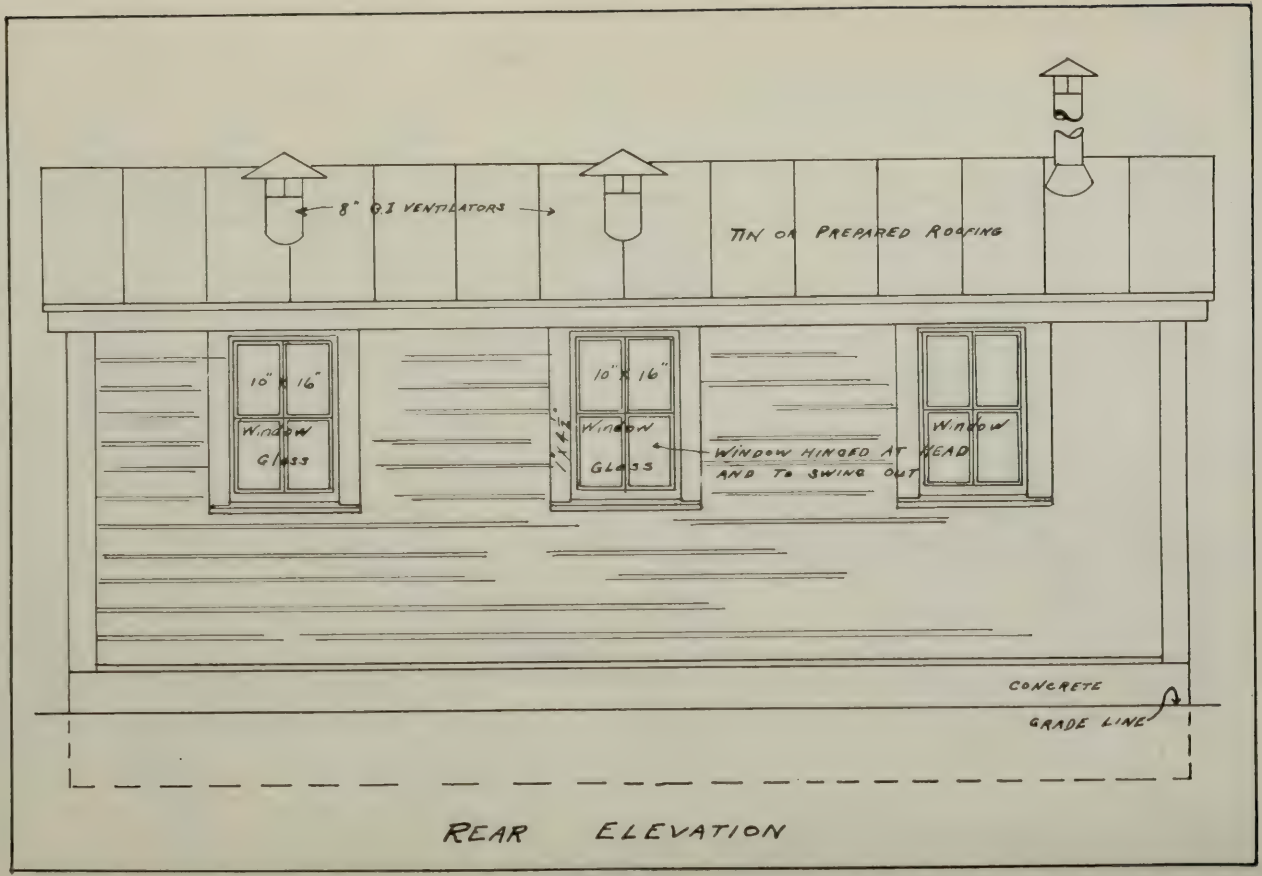

8" G.I VENTILATORS
TIN OR PREPARED ROOFING
10" × 16"
Window
Glass
10" × 16"
1" × 4½"
Window
Glass
WINDOW HINGED AT HEAD
AND TO SWING OUT
Window
CONCRETE
GRADE LINE
REAR ELEVATION

FIGURE 12.

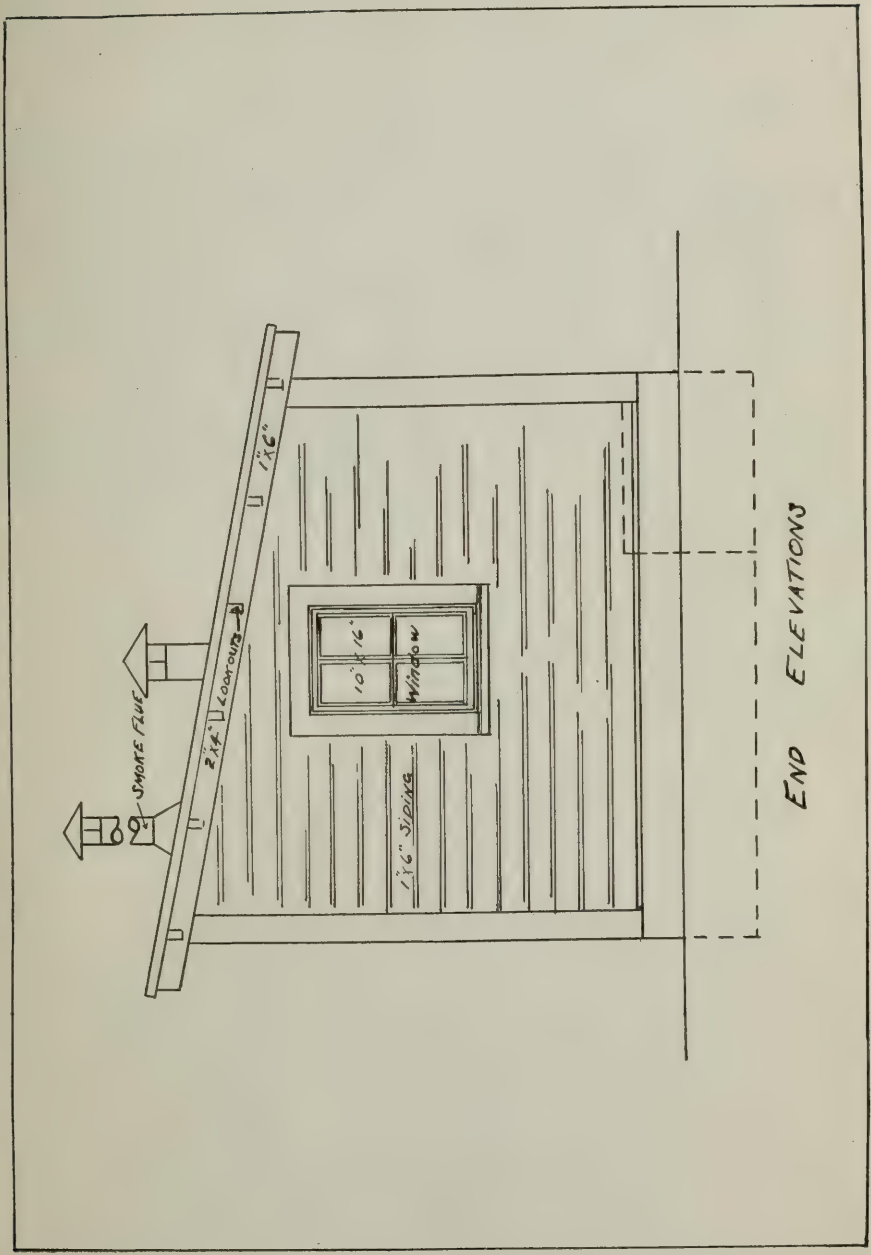
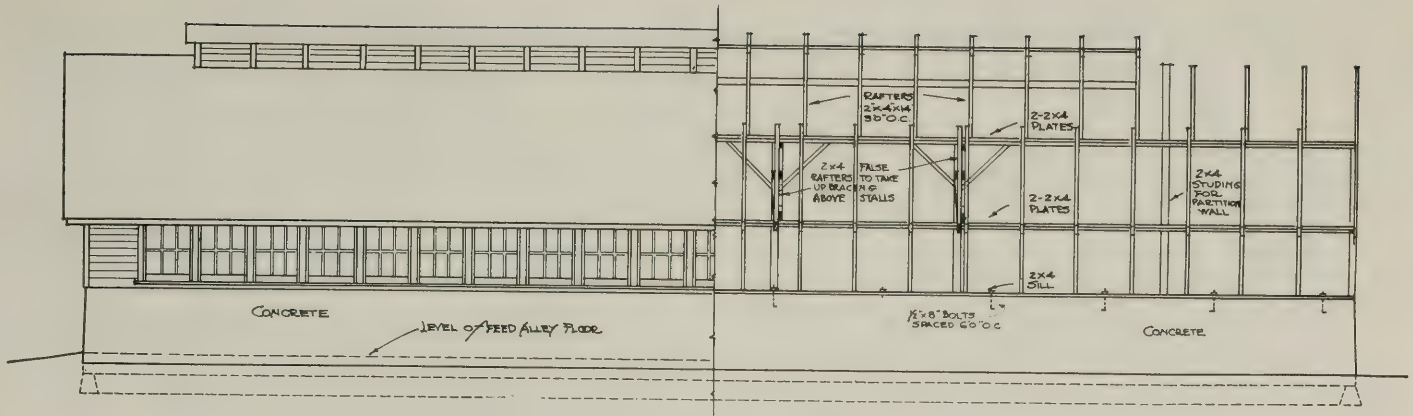

SMOKE FLUE
2"x4" LOOKOUTS
1"x6"
10"x16" Window
1"x6" Siding
END ELEVATIONS

FIGURE 13.

The following is a set of plans for a milking shed drawn by J. B. Davidson, Professor of Agricultural Engineering at the University Farm, Davis, California. These plans are valuable, as a milking shed built from them would be about all that could be desired for practical purposes. At the same time an insanitary and impractical milking shed could not be built much cheaper.

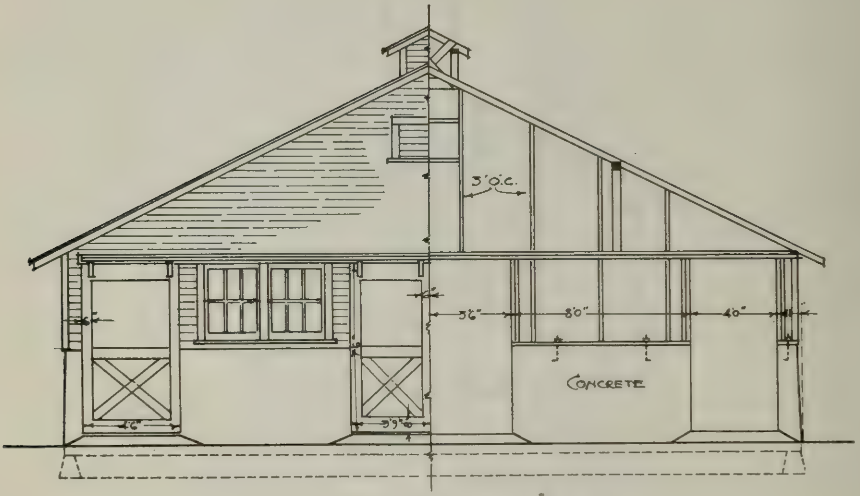
Most of the milking barns built some years ago are too dark and unless they are disinfected at short intervals they are very unhealthy for the cattle. These plans call for a great number of windows and if it is convenient to build the milking shed north and south the sun can shine directly on the floor and mangers of the one side in the forenoon and of the other side in the afternoon. If there is no dirt or refuse left in the barn during the day, under which disease germs may hide, the sun or strong light will thoroughly disinfect it every day. Such a barn with such splendid light and ventilation will be a great factor in preventing the spread of tuberculosis and contagious abortion.

The floor from the stanchions to the gutter is 4 feet 8 inches. This is the proper length for small cows, but where the cows are large, 5 feet is better.


RAFTERS 2"x4"x14' 30"O.C.
2-2x4 PLATES
2x4 RAFTERS UP BRACING ABOVE
FALSE TO TAKE STALLS
2-2x4 PLATES
2x4 STUDING FOR PARTITION WALL
2x4 SILL
½"x8" BOLTS SPACED 6'0" O C
CONCRETE
LEVEL OF FEED ALLEY FLOOR
CONCRETE

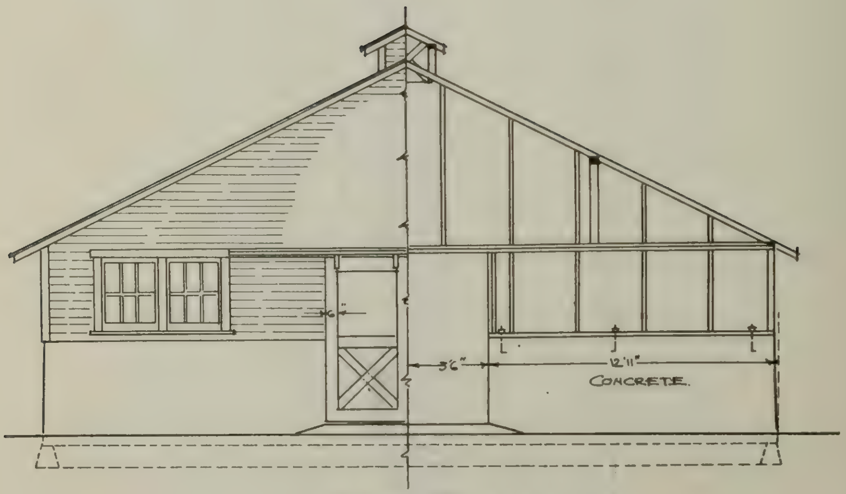
EAST ELEVATION

FIGURE 14.



SOUTH ELEVATION

FIGURE 15.



NORTH ELEVATION

FIGURE 16.

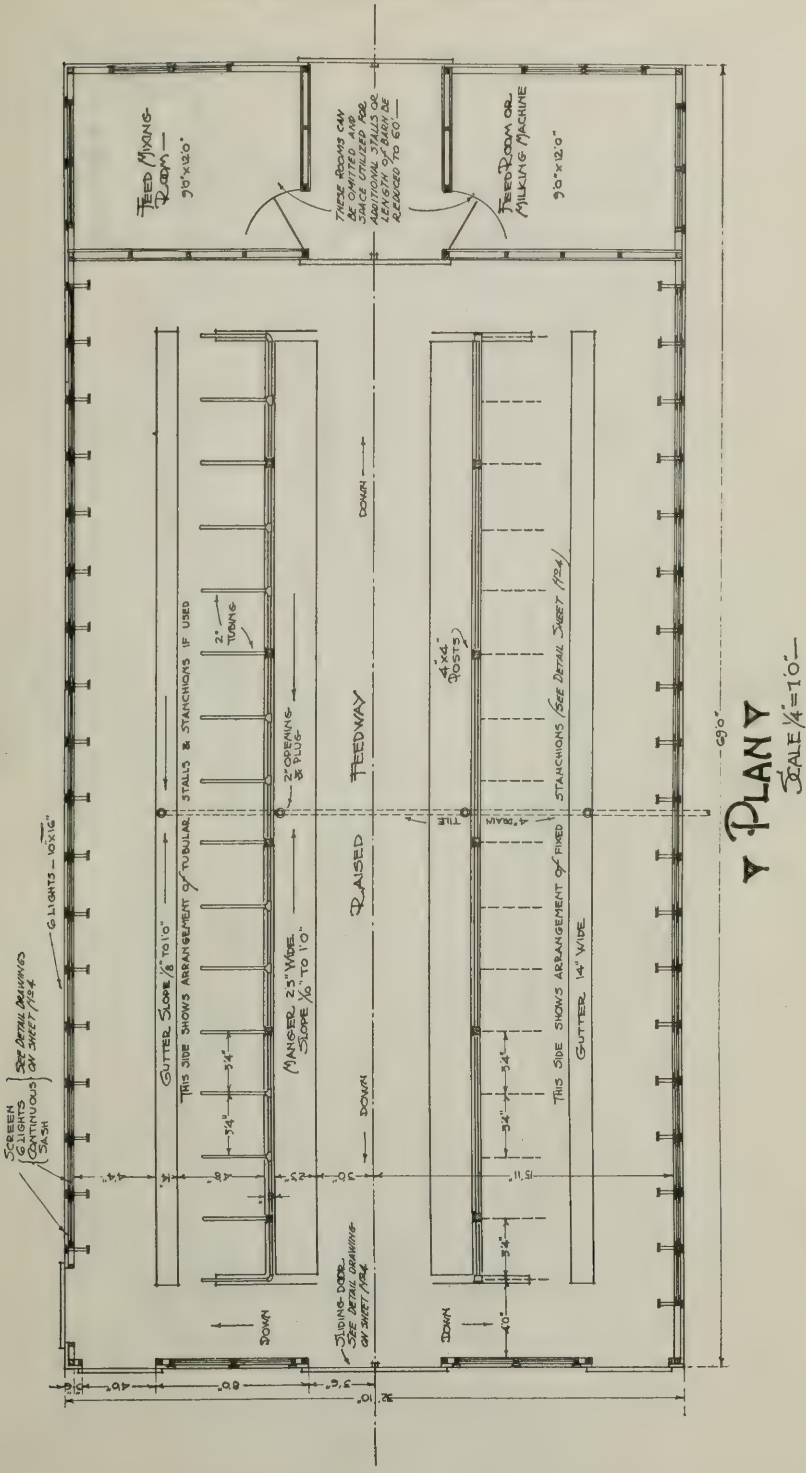
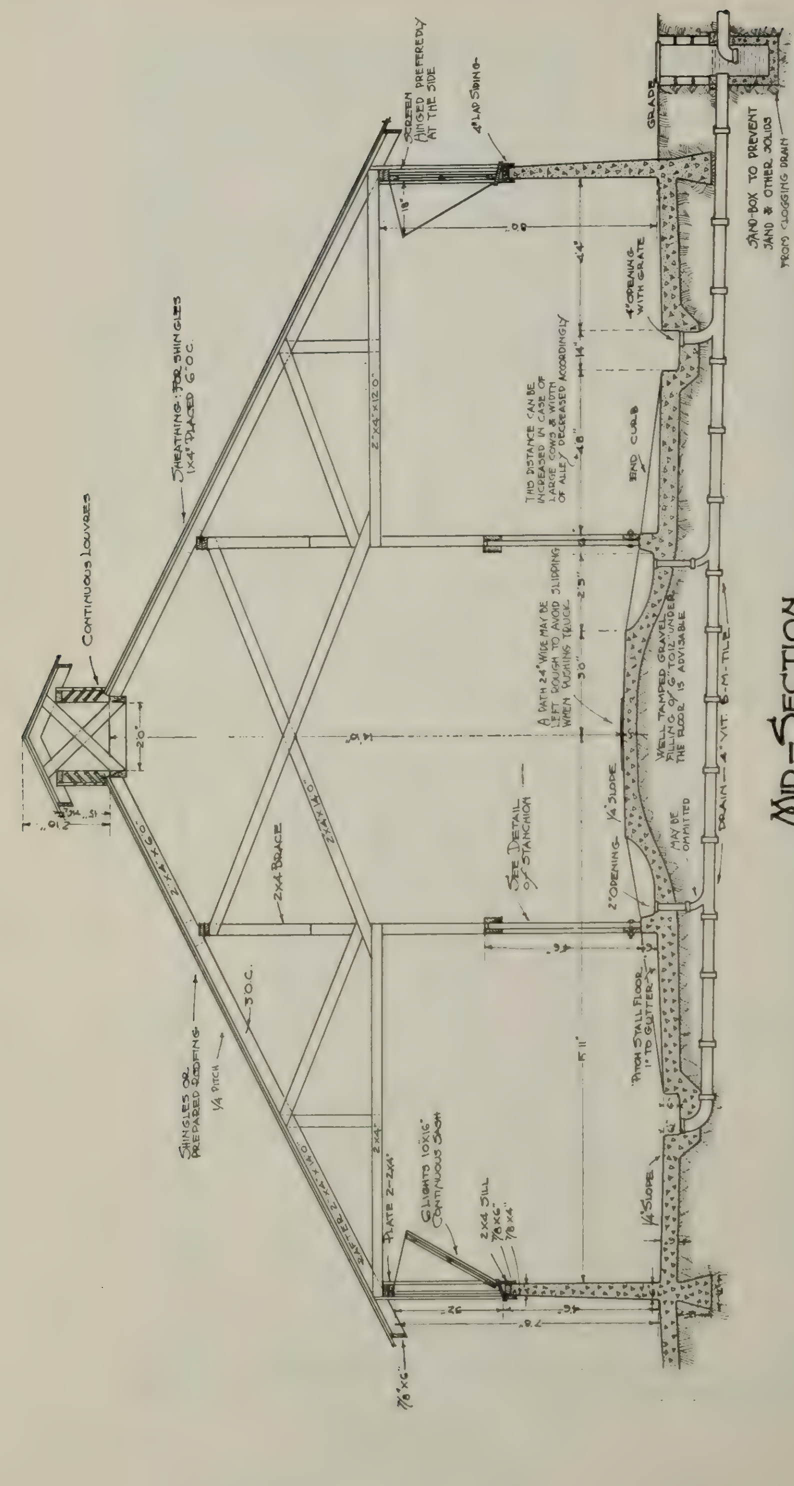

FEED MIXING ROOM —
9'0"x12'0"
THESE ROOMS CAN BE OMITTED AND SPACE UTILIZED FOR ADDITIONAL STALLS OR LENGTH OF BARN BE REDUCED TO 60'—
FEED ROOM OR MILKING MACHINE
9'0"x12'0"
GUTTER SLOPE 1/8" TO 1'0"
THIS SIDE SHOWS ARRANGEMENT OF TUBULAR STALLS & STANCHIONS IF USED
2" TUBING
2" OPENING & PLUG
MANGER 2'3" WIDE SLOPE 1/16" TO 1'0"
DOWN
FEEDWAY
RAISED
DOWN
4"x4" POSTS
4" DRAIN TILE
THIS SIDE SHOWS ARRANGEMENT OF FIXED STANCHIONS (SEE DETAIL SHEET No 4)
GUTTER 14" WIDE
3'4"
3'4"
3'4"
3'4"
3'4"
4'0"
SCREEN 6 LIGHTS CONTINUOUS SASH
SEE DETAIL DRAWINGS ON SHEET No 4
6 LIGHTS — 10"x16"
4'4"
1'4"
4'8"
2'2"
3'0"
15'11"
SLIDING DOOR SEE DETAIL DRAWING ON SHEET No 4
DOWN
DOWN
4'0"
8'0"
5'6"
36'0"
69'0"
PLAN
SCALE 1/4"=1'0"

FIGURE 17.


CONTINUOUS LOUVRES
SHEATHING: FOR SHINGLES 1x4" PLACED 6" O.C.
SCREEN HINGED PREFEREDLY AT THE SIDE
4" LAP SIDING
GRADE
SAND-BOX TO PREVENT SAND & OTHER SOLIDS FROM CLOGGING DRAIN
4" OPENING WITH GRATE
THIS DISTANCE CAN BE INCREASED IN CASE OF LARGE COWS & WIDTH OF ALLEY DECREASED ACCORDINGLY
END CURB
A PATH 24" WIDE MAY BE LEFT ROUGH TO AVOID SLIPPING WHEN PUSHING TRUCK
WELL TAMPED GRAVEL FILLING OF 6" TO 12" UNDER THE FLOOR IS ADVISABLE
DRAIN — 4" VIT. S-M-TILE
MAY BE OMMITTED
1/4" SLOPE
2" OPENING
SEE DETAIL OF STANCHION
2x4 BRACE
2"x4"x12'0"
2"x4"x14'0"
2"x4"x6'0"
2'0"
SHINGLES OR PREPARED ROOFING
1/4 PITCH
3'0 C.
PLATE 2-2x4
2x4"
RAFTER 2"x4"x14'0"
6 LIGHTS 10"x16" CONTINUOUS SASH
2x4 SILL 7/8x6" 7/8x4"
PITCH STALL FLOOR 1" TO GUTTER
1/4" SLOPE
7/8"x6"
18"
8'0"
4'4"
14"
4'8"
2'5"
3'0"
4'0"
5'11"
2'6"
7'8"

MID-SECTION
SCALE ½"=1'0"

FIGURE 18.

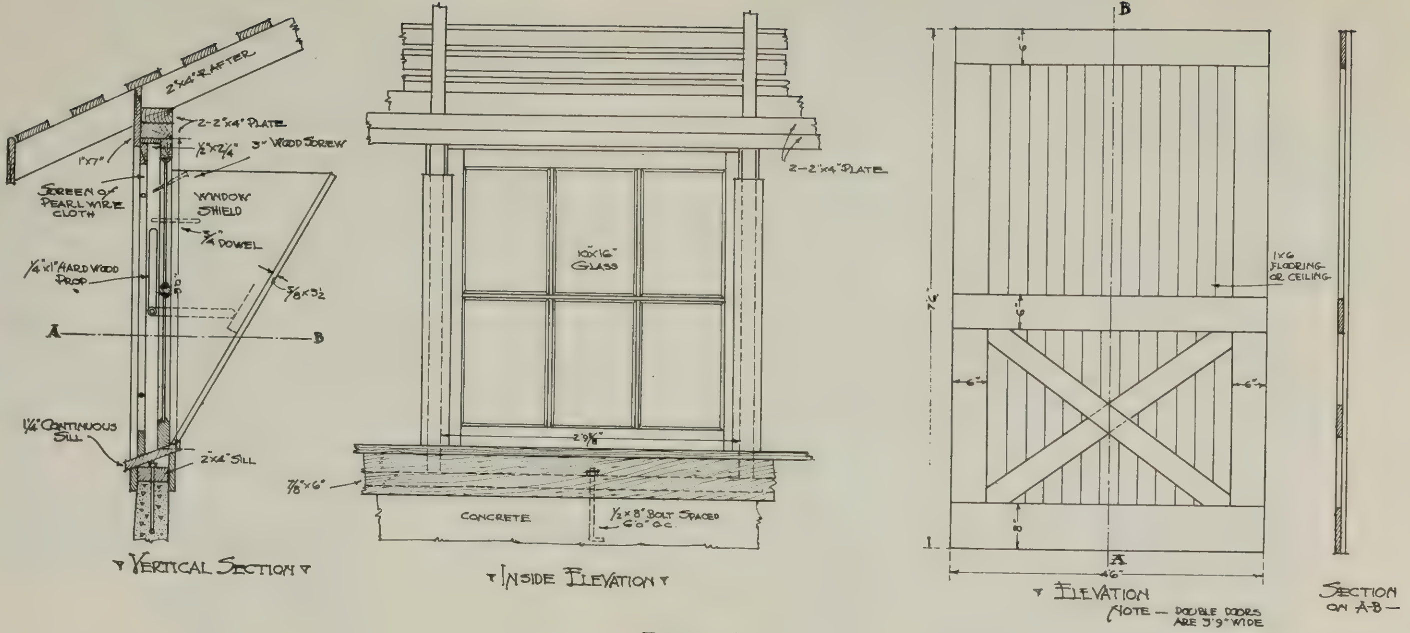

2"x4" RAFTER
2-2"x4" PLATE
1"x7"
1/2"x2 1/4"
3" WOOD SCREW
SCREEN OF PEARL WIRE CLOTH
WINDOW SHIELD
3/4" DOWEL
1/4"x1" HARD WOOD PROP
5/8x5 1/2
A
B
1 1/4" CONTINUOUS SILL
2"x4" SILL
VERTICAL SECTION
2-2"x4" PLATE
10"x16" GLASS
2'9 1/8"
7/8"x6"
CONCRETE
1/2x8" BOLT SPACED 6'0" O.C.
INSIDE ELEVATION
B
6"
1x6 FLOORING OR CEILING
7'6"
6"
6"
6"
8"
A
4'6"
ELEVATION
NOTE — DOUBLE DOORS ARE 3'9" WIDE
SECTION ON A-B —

FIGURE 19.

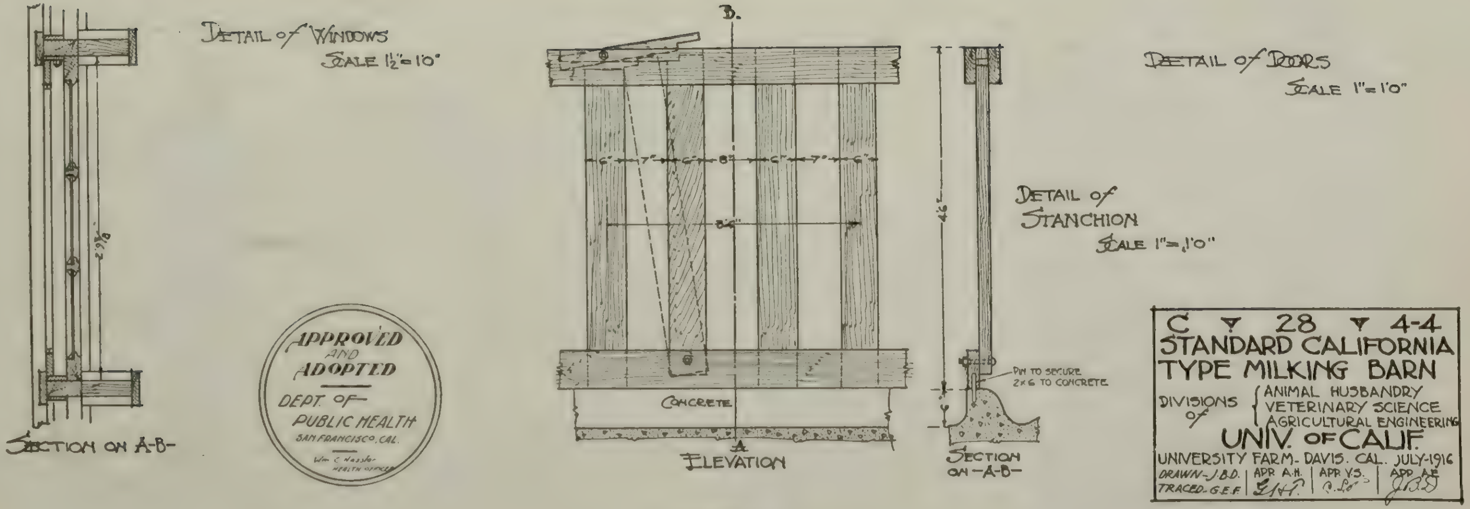

DETAIL of WINDOWS
SCALE 1½"=1'0"
2'9⅞"
SECTION ON A-B-
APPROVED AND ADOPTED
DEPT. OF PUBLIC HEALTH
SAN FRANCISCO, CAL.
Wm C Hassler HEALTH OFFICER
B.
6" 7" 6" 8" 6" 7" 6"
8'6"
CONCRETE
A
ELEVATION
4'6"
PIN TO SECURE 2×6 TO CONCRETE
SECTION ON -A-B-
DETAIL of STANCHION
SCALE 1"=1'0"
DETAIL of DOORS
SCALE 1"=1'0"
C 28 4-4
STANDARD CALIFORNIA TYPE MILKING BARN
DIVISIONS of ANIMAL HUSBANDRY VETERINARY SCIENCE AGRICULTURAL ENGINEERING
UNIV. OF CALIF.
UNIVERSITY FARM- DAVIS. CAL. JULY-1916
DRAWN-J.B.D. TRACED-G.E.F.
APR A.H.
APR V.S.
APP A.E. J.B.D.

FIGURE 20.

The completed milk house and milking shed built from plans drawn by Dr. J. A. Woodside and approved and recommended by the San Diego Board of Health.

The completed milking shed built from the plans drawn by J. B. Davidson, Professor of Agricultural Engineering, and approved and recommended by the San Francisco Board of Health.

TABLE No. 1.

Analysis and Examination in Laboratory.

The following glassware has been tested for accuracy for creameries and other users of the State:

Type	Number examined	Number approved	Number rejected
Babcock bottles	15,600	14,860	740
Pipettes	151	149	2
Burettes	11	11	
Acid measures	3	3	

In addition to the Babcock glassware mentioned above, the following pieces of apparatus have been examined for accuracy:

Type	Number of pieces examined
Lactometers	19
Thermometers	21
Hydrometers	1
Balances	6
Sets of weights	1
Weights	41
Total	89

TABLE No. 2.

Since December 1, 1914, the following samples of dairy products have been tested in the laboratory of the Bureau:

Substance	Number analyzed	Above standard	Below standard
Milk	436	320	116
Cream	1,216	1,212	4
Ice cream	71	69	2
Evaporated milk	32	30	2
Evaporated skimmilk	4		
Butter	32	29	3
Cheese	26	21	5
Skimmilk	24		
Buttermilk	3		
Dried skimmilk	1		
Whey	1		
Water	6		
Salt	5		
Totals	1,857	1,681	132

STATISTICS.

Below is the production of butter and cheese in each county in this state as reported by the producers to this department:

TABLE NO. 3.

Butter produced during years ending September 30, 1915-1916.

County	1915, pounds	1916, pounds
Alameda	437,401	450,688
Alpine	27,000	28,000
Amador	114,890	133,953
Butte	1,124,710	2,073,297
Calaveras	133,197	137,207
Colusa	566,512	414,226
Contra Costa	621,575	730,474
Del Norte	887,500	842,280
El Dorado	127,958	132,853
Fresno	3,158,220	4,204,416
Glenn	1,258,020	1,725,746
Humboldt	5,591,870	5,588,604
Imperial	6,334,316	6,780,552
Inyo	303,309	339,677
Kern	982,694	971,811
Kings	3,811,477	3,960,949
Lake	101,953	107,560
Lassen	220,000	177,433
Los Angeles	567,621	167,286
Madera	462,501	386,330
Marin	2,338,338	2,475,329
Mendocino	498,779	550,285
Merced	4,253,000	4,028,062
Modoc	85,534	232,561
Mono	10,000	11,000
Monterey	939,483	810,235
Napa	600,439	586,503
Nevada	241,689	197,574
Orange	74,000	75,000
Placer	128,904	133,542
Plumas	320,866	231,931
Riverside	245,270	229,692
Sacramento	1,737,511	1,422,051
San Benito	438,386	349,633
San Bernardino	100,000	92,300
San Diego	593,384	441,409
San Joaquin	1,184,658	1,618,455
San Luis Obispo	2,759,751	2,303,547
San Mateo	327,448	260,880
Santa Barbara	510,460	926,487
Santa Clara	309,552	291,883
Santa Cruz	274,439	233,666
Shasta	123,000	146,850
Sierra	150,000	308,908
Siskiyou	880,013	942,370
Sonoma	2,965,893	3,071,474
Solano	1,043,303	923,498
Stanislaus	9,973,320	9,980,021
Sutter	969,594	1,048,270
Tehama	473,733	501,396
Tulare	4,787,690	4,677,839
Ventura	34,588	29,321
Yolo	1,091,496	1,241,083
Yuba	252,164	303,777
	67,549,409	70,030,174

TABLE NO. 4.

CHEESE PRODUCTION.

During the years ending September 30, 1915 and September 30, 1916, cheese was produced by the different counties as follows:

County	1915, pounds	1916, pounds
Alameda	----	19.136
Amador	13,688	10,543
Butte	79,200	80.300
Colusa	32,400	36,500
Contra Costa	----	14,352
Del Norte	----	67,335
Fresno	445,945	607,185
Humboldt	544,350	430,030
Imperial	61.000	210,990
Kern	43.750	30.000
Lassen	113,988	110,719
Los Angeles	200	659,902
Marin	476,180	447,320
Mendocino	144,000	101,366
Merced	142,375	54,500
Modoc	168,665	54,068
Mono	12,000	12.000
Monterey	800,789	1,031,384
Napa	26,087	2,890
Plumas	2,800	----
Riverside	8,500	----
Sacramento	427,065	386.920
San Benito	202,484	366,001
San Joaquin	117,302	120,557
San Luis Obispo	134,662	175,963
San Mateo	152,690	159,565
Santa Barbara	----	163,750
Santa Clara	1,089,288	812,351
Santa Cruz	228,169	245,974
Shasta	----	38,485
Sierra	4,000	13,335
Siskiyou	72,480	86,969
Solano	----	19,136
Sonoma	271,753	378,796
Stanislaus	67,200	480,657
Sutter	158,735	73,650
Tehama	1,000	----
Tulare	54,000	86,700
Yolo	6,030	46,795
Yuba	147,000	109,000
	6,249,775	7,745,124

TABLE NO. 5.

The following are the monthly receipts of butter in San Francisco for the two years ending September 30, 1916:

Month	1914-1915, pounds	1915-1916, pounds
October	1,463,600	1,921,100
November	1,315,400	1,732,400
December	1,735,100	1,832,500
January	1,539,600	1,790,600
February	1,553,800	1,766,200
March	2,575,500	2,468,600
April	2,996,300	3,404,000
May	3,154,866	3,259,000
June	2,775,334	3,066,000
July	3,598,800	2,212,500
August	2,591,400	2,283,800
September	2,023,800	2,141,000
	27,323,500	27,877,700

TABLE NO. 6.

The following are the monthly receipts of cheese in San Francisco for the two years ending September 30, 1916:

Month	1914-1915, pounds	1915-1916, pounds
October	841,500	869,200
November	548,800	748,000
December	538,300	828,700
January	508,400	767,700
February	488,000	707,800
March	603,400	946,200
April	775,800	1,276,600
May	796,600	1,626,000
June	1,403,300	1,865,400
July	1,455,200	2,100,800
August	1,248,900	1,612,400
September	1,392,400	1,111,800
	10,600,600	14,460,600

TABLE NO. 7.

BUTTER PRODUCTION.

The following is the estimated butter production for the last ten years:

	Pounds
1907	44,599,211
1908	48,469,585
1909	43,899,018
1910	45,989,140
1911	50,380,736
1912	54,940,886
1913	55,542,709
1914	59,286,460
1915	67,549,409
1916	70,030,174

TABLE NO. 8.

CHEESE PRODUCTION.

The following is the cheese production for the last ten years:

	Pounds
1907	5,928,946
1908	6,262,194
1909	4,431,194
1910	4,648,348
1911	4,640,491
1912	4,785,617
1913	5,600,972
1914	6,016,815
1915	6,249,775
1916	7,745,124

TABLE NO. 9.

CONDENSED MILK PRODUCTION.

The following is the condensed milk production for the last ten years:

	Cases
1907	134,907
1908	100,069
1909	83,476
1910	172,916
1911	116,384
1912	172,309
1913	172,800
1914	274,096
1915	345,402
1916	379,212

TABLE NO. 10.

Butter and Cheese Prices In the San Francisco Market.

Month	1913-1914		1914-1915		1915-1916	
	Butter, cents per pound	Cheese, cents per pound	Butter, cents per pound	Cheese, cents per pound	Butter, cents per pound	Cheese, cents per pound
October	32.48	17.03	32.50	17.00	26.90	16.46
November	32.56	18.37	34.00	16.50	28.59	16.68
December	31.85	17.69	31.50	13.50	27.36	16.04
January	29.92	18.06	32.00	15.00	28.00	16.40
February	28.19	18.89	30.50	14.00	30.54	17.33
March	22.85	16.45	27.50	14.50	28.02	17.94
April	23.06	14.76	23.50	13.00	26.24	15.14
May	23.83	13.52	24.00	12.00	24.78	12.82
June	24.02	12.99	26.00	11.50	24.94	14.58
July	24.55	13.23	27.00	13.00	26.00	14.09
August	27.26	14.08	28.00	13.00	26.83	14.23
September	30.81	14.37	28.00	16.00	30.56	14.75
Average	27.61	15.79	28.70	14.10	27.39	15.54

TABLE NO. 11.

The following are the average prices of butter and cheese in San Francisco during the ten years ending September 30, 1916:

	Butter	Cheese
1907	30.10	14.02
1908	27.80	12.90
1909	30.00	14.30
1910	31.30	15.60
1911	28.00	14.50
1912	30.77	15.46
1913	32.12	16.06
1914	27.61	15.79
1915	28.70	14.10
1916	27.39	15.54

TABLE NO. 12.

Compared with former years, the receipts of butter in San Francisco show as follows:

	Pounds
1907	15,384,137
1908	14,610,522
1909	14,328,000
1910	13,934,200
1911	19,033,600
1912	23,548,850
1913	23,905,100
1914	22,580,950
1915	27,323,500
1916	27,877,700

TABLE NO. 13.

Annual Value of Dairy Products.

1915.

Butter, 67,549,409 pounds	$19,386,680
Cheese, 6,249,775 pounds	881,218
Condensed, evaporated and powdered milk, 16,579,317 pounds	1,352,959
Casein, 690,750 pounds	34,537
Market milk, cream and ice cream	12,000,000
Calves produced on dairies	3,000,000
Skimmilk and buttermilk	1,750,000
Total	$38,405,394

1916.

Butter, 70,030,174 pounds	$19,181,264
Cheese, 7,745,124 pounds	1,203,592
Condensed, evaporated and powdered milk, 18,610,236 pounds	1,488,818
Casein, 1,864,317 pounds	186,431
Market milk, cream and ice cream	14,000,000
Calves produced on dairies	2,500,000
Skimmilk and buttermilk	1,750,000
Total	$40,310,105

CREAMERIES IN OPERATION IN THE STATE.

Name	Address	County
Berkeley Farm Creamery	Berkeley	Alameda
Varsity Creamery	Berkeley	Alameda
Eden Creamery	Hayward	Alameda
Fred S. Young	Livermore	Alameda
American Creamery Co.	Oakland	Alameda
Central Creamery Co.	Oakland	Alameda
Jersey Milk, Cream and Butter Co.	Oakland	Alameda
Oakland Cream Depot	Oakland	Alameda
Royal Creamery	Oakland	Alameda
Ione Creamery	Ione	Amador
Amador County Creamery	Sutter Creek	Amador
Chico Creamery	Chico	Butte
Gridley Creamery and Ice Co.	Gridley	Butte
Oroville Creamery	Oroville	Butte
Colusa Butter Co.	Colusa	Colusa
Martinez Creamery Co.	Martinez	Contra Costa
California Central Creameries	Crescent City	Del Norte
Crescent Creamery Co.	Smith River	Del Norte
Robert Sarina	Smith River	Del Norte
Danish Creamery Association	Fresno	Fresno
Kerman Creamery	Kerman	Fresno
Laton Cooperative Creamery Ass'n.	Laton	Fresno
California Central Creameries	Riverdale	Fresno
Riverdale Cooperative Creamery	Riverdale	Fresno
Jacinto Creamery	Glenn	Glenn
Orland Cheese and Butter Co.	Orland	Glenn
Orland Creamery	Orland	Glenn
Willows Creamery Co.	Willows	Glenn
United Creameries	Arcata	Humboldt
Eclipse Creamery	Beatrice	Humboldt
California Central Creameries	Eureka	Humboldt
California Central Creameries	Ferndale	Humboldt
Capital Creamery Co.	Ferndale	Humboldt
Valley Flower Creamery Co.	Ferndale	Humboldt
Grizzly Bluff Creamery	Grizzly Bluff	Humboldt
Libby, McNeil & Libby	Loleta	Humboldt
Sunset Creamery Co.	Loleta	Humboldt
Brawley Creamery and Cold Storage Co.	Brawley	Imperial
California Central Creameries	El Centro	Imperial
Heber Creamery Co.	Heber	Imperial
Holtville Cooperative Creamery	Holtville	Imperial
Delta Creamery Co.	Imperial	Imperial
Inyo Creamery Co.	Bishop	Inyo
Danish Dairy and Creamery Co.	Bakersfield	Kern
Meadowland Creamery Co.	Bakersfield	Kern
Kern County Sanitary Creamery	McFarland	Kern
Wasco Creamery	Wasco	Kern
Los Angeles Creamery Co.	Hanford	Kings
Lucerne Cream and Butter Co.	Hanford	Kings
Swift & Co.	Hardwick	Kings
California Central Creameries	Lemoore	Kings
Clear Lake Creamery	Lakeport	Lake
Alturas Creamery	Bieber	Lassen
Standish Creamery	Susanville	Lassen
E. E. Burr	Los Angeles	Los Angeles
Crescent Creamery Co.	Los Angeles	Los Angeles
Los Angeles Creamery Co.	Los Angeles	Los Angeles
Chowchilla Creamery	Chowchilla	Madera
Madera Cooperative Creamery	Madera	Madera
Sierra Creamery	Madera	Madera

CREAMERIES IN OPERATION IN THE STATE—Continued.

Name	Address	County
J. Carlinzoli	Marshall	Marin
Gallagher Bros.	Marshall	Marin
R. E. Dickson	Olema	Marin
H. Claussen	Pt. Reyes	Marin
F. H. Hussey	Pt. Reyes	Marin
Light House Creamery	Pt. Reyes	Marin
A. Petersen	Pt. Reyes	Marin
Point Reyes Cooperative Creamery	Pt. Reyes	Marin
P. F. Scillacci	Pt. Reyes	Marin
F. W. Dickson	San Geronimo	Marin
Joe V. Mendoza	Tomales	Marin
Fort Bragg Creamery, Inc.	Ft. Bragg	Mendocino
Manchester Creamery	Manchester	Mendocino
Alberta Creamery	Pt. Arena	Mendocino
Dairy Delivery Co.	Gustine	Merced
Fountain City Creamery	Merced	Merced
Alturas Creamery	Alturas	Modoc
Castroville Creamery Co.	Castroville	Monterey
Moss Rose Creamery	Salinas	Monterey
Salinas Creamery	Salinas	Monterey
Soledad Cooperative Creamery	Soledad	Monterey
Napa Valley Creamery Co.	Napa	Napa
Taplin Bros.	St. Helena	Napa
Grass Valley Creamery	Grass Valley	Nevada
Penn Valley Creamery Association	Smartville	Nevada
Auburn Creamery	East Auburn	Placer
Snowcrest Creamery	Beckwith	Plumas
Quincy Creamery	Quincy	Plumas
Taylorville Creamery Co.	Taylorville	Plumas
Blythe Creamery and Ice Co.	Blythe	Riverside
Mission Creamery	Perris	Riverside
Riverside Dairy Co.	Riverside	Riverside
Borchers Dairy	Sacramento	Sacramento
Crystal Cream and Butter Co.	Sacramento	Sacramento
Hollister Creamery	Hollister	San Benito
Chino Creamery	Chino	San Bernardino
Victoria Creamery	San Bernardino	San Bernardino
San Pasqual Creamery	Escondido	San Diego
W. B. Hage	San Diego	San Diego
Producers Mutual Dairy Association	San Diego	San Diego
Associated Milk Producers	San Francisco	San Francisco
California Central Creameries	San Francisco	San Francisco
Dairy Delivery Company	San Francisco	San Francisco
Finks Creamery	San Francisco	San Francisco
Foxhall Creamery	San Francisco	San Francisco
Gilt Edge Creamery	San Francisco	San Francisco
Nelson Bros.	San Francisco	San Francisco
Original Fairville Creamery	San Francisco	San Francisco
Russell Cream Depot	San Francisco	San Francisco
Western Meat Co.	San Francisco	San Francisco
Manteca Creamery	Manteca	San Joaquin
Gold Medal Creamery Co.	Stockton	San Joaquin
San Joaquin County Creamery	Stockton	San Joaquin
Stockton Creamery	Stockton	San Joaquin
Valley Creamery	Stockton	San Joaquin
M. G. Salmina	Harmony	San Luis Obispo
California Central Creameries	San Luis Obispo	San Luis Obispo
California Polytechnic School	San Luis Obispo	San Luis Obispo
Los Angeles Creamery Co.	San Luis Obispo	San Luis Obispo

CREAMERIES IN OPERATION IN THE STATE.—Concluded.

Name	Address	County
Swift & Co.	San Luis Obispo	San Luis Obispo
Golden Eagle Creamery	Guadaloupe	Santa Barbara
Santa Inez Valley Creamery	Solvang	Santa Barbara
Santa Clara Valley Creamery Co.	Santa Clara	Santa Clara
Live Oak Creamery	Gilroy	Santa Clara
Elite Creamery	San Jose	Santa Clara
Gold Nugget Creamery	San Jose	Santa Clara
Purity Cream and Butter Co.	San Jose	Santa Clara
San Jose Creamery Co.	San Jose	Santa Clara
Commercial Creamery Co.	Santa Cruz	Santa Cruz
Springvale Farm Dairy	Santa Cruz	Santa Cruz
Sunshine Creamery	Santa Cruz	Santa Cruz
Wilders Creamery	Santa Cruz	Santa Cruz
Watsonville Creamery	Watsonville	Santa Cruz
Cassel Creamery Co.	Cassel	Shasta
Cottonwood Creamery	Cottonwood	Shasta
Sierra Valley Creamery	Loyalton	Sierra
Model Creamery	Sierraville	Sierra
Dorris Creamery	Dorris	Siskiyou
H. E. Norris	Edgewood	Siskiyou
Fort Jones Creamery and Packing Co.	Fort Jones	Siskiyou
Siskiyou Creamery Co.	Greenview	Siskiyou
Montague Creamery	Montague	Siskiyou
Shasta Creamery	Sisson	Siskiyou
Bodega Cooperative Creamery	Bodega	Sonoma
C. Ricioli	Duncans Mills	Sonoma
C. Rules	Jenner	Sonoma
Petaluma Cooperative Creamery	Petaluma	Sonoma
Western Refrigerating Co.	Petaluma	Sonoma
Santa Rosa Creamery	Santa Rosa	Sonoma
Western Creameries	Benicia	Solano
Dixon Creamery	Dixon	Solano
Henry Bird	Suisun	Solano
Union Creamery	Vallejo	Solano
Ceres Creamery	Ceres	Stanislaus
Keyes Creamery	Keyes	Stanislaus
Modesto Creamery	Modesto	Stanislaus
Stanislaus Creamery Co.	Modesto	Stanislaus
Oakdale Creamery	Oakdale	Stanislaus
Turlock Creamery Co.	Turlock	Stanislaus
Los Molinos Creamery Co.	Los Molinos	Tehama
Red Bluff Creamery Co.	Red Bluff	Tehama
Vina Creamery	Vina	Tehama
Exeter Creamery Co.	Exeter	Tulare
Porterville Cooperative Creamery	Porterville	Tulare
Tipton Cooperative Creamery	Tipton	Tulare
Dairymans Cooperative Creamery	Tulare	Tulare
Good Luck Creamery	Tulare	Tulare
Visalia Cooperative Creamery	Visalia	Tulare
Camarillo Dairy	Camarillo	Ventura
University Farm	Davis	Yolo
Woodland Creamery	Woodland	Yolo
Brown's Valley Creamery	Browns Valley	Yuba
Marysville Creamery	Marysville	Yuba

CHEESE FACTORIES KNOWN TO BE IN OPERATION IN STATE.

Name	Address	County
Prouty & Villaborghi	Ione	Amador
Rudin Bros.	Chico	Butte
Zumwalt & Marty	Colusa	Colusa
Western Meat Co.	Requa	Del Norte
C. P. Cigalotti	Burrel	Fresno
Dodini & Brughelli	Burrel	Fresno
James T. Farrell	Burrel	Fresno
Charles Guglielmoni	Burrel	Fresno
Felix Maggini	Burrel	Fresno
P. Rebozzi & Co.	Burrel	Fresno
Caruthers Cheese Factory	Caruthers	Fresno
Joe Pandrini	Lanare	Fresno
California Central Creameries	Arcata	Humboldt
Robert Baretta	El Centro	Imperial
Adolf Burkhalter	El Centro	Imperial
Bizzini-Domenigoni	El Centro	Imperial
A. Vanoni	El Centro	Imperial
E. H. Hilder	Heber	Imperial
Ricca & Albertoni	Holtville	Imperial
J. D. Huston	Imperial	Imperial
Peter Cattani	East Bakersfield	Kern
Lakeview Cheese Co.	Corcoran	Kings
Frasco Cheese Factory	Hanford	Kings
Hewitt & Hewitt	Hardwick	Kings
H. C. Watson	Bieber	Lassen
D. Casco	Compton	Los Angeles
Western Cheese Co.	Nicasio	Marin
Novato French Cheese Co.	Novato	Marin
David Lavaroni	Novato	Marin
Parisian French Cheese Co.	Novato	Marin
Manchester Creamery	Manchester	Mendocino
Edward Folletta	Los Banos	Merced
Carragut & Co.	Merced	Merced
Joe Wiget	Planada	Merced
Adin Cheese Factory	Adin	Modoc
H. C. Watson	Lookout	Modoc
S. H. Hunnenill	Bridgeport	Mono
A. M. Allen	Carmel	Monterey
Bassi Bros.	Chualar	Monterey
M. Bianchi	Chualar	Monterey
A. Pozzi	Chualar	Monterey
Frank Gonthier	Gonzales	Monterey
Gerry Pura	Gonzales	Monterey
Pura Bros.	Gonzales	Monterey
Peter Barlogio	Greenfield	Monterey
Charles Bonifacio	Greenfield	Monterey
Charles Borzini	Greenfield	Monterey
Andrew Giazomazzi	Greenfield	Monterey
G. Salmini	Greenfield	Monterey
Tomassini & Grudici	Greenfield	Monterey
C. Tonzi	Greenfield	Monterey
Bianco & Co.	King City	Monterey
G. P. Codoni	King City	Monterey
Harvey Bros. & Doud	King City	Monterey
Joe Lanini	King City	Monterey
Tognetti Bros.	King City	Monterey
D. A. Willoughby	King City	Monterey
Ed. Corda & Co.	Salinas	Monterey
Panziera Bros.	Salinas	Monterey
Manuel Quilla	Salinas	Monterey
B. Sargenti	Salinas	Monterey
J. Violini	Salinas	Monterey
Matt Williams	Salinas	Monterey

CHEESE FACTORIES KNOWN IN OPERATION IN STATE.—Continued.

Name	Address	County
L. Belli	Soledad	Monterey
Mrs. A. Binsacca	Soledad	Monterey
R. Del Ponte	Soledad	Monterey
Andrew Franscioni	Soledad	Monterey
John Frolli	Soledad	Monterey
Gregory Giacomazzi	Soledad	Monterey
Giatonini & Martella	Soledad	Monterey
V. Ioppini	Soledad	Monterey
B. B. Lanini	Soledad	Monterey
G. Madonna & Co.	Soledad	Monterey
Mills & Swettman	Soledad	Monterey
Steve Moranda	Soledad	Monterey
L. Pincini	Soledad	Monterey
J. M. Purra	Soledad	Monterey
B. M. Sargenti	Soledad	Monterey
John Breschini	San Ardo	Monterey
Cascioni Bros.	San Ardo	Monterey
John Folletta	San Ardo	Monterey
Porti & Ferrini	San Ardo	Monterey
William Ross	Taylorville	Plumas
Joseph Jausch	Bridgehouse	Sacramento
Joseph Holdener	Cosumne	Sacramento
A. Inderbitzen	Cosumne	Sacramento
Henderson Co.	Galt	Sacramento
G. B. Sargenti	Galt	Sacramento
G. J. Bryte & Co.	Sacramento	Sacramento
John Augustine	Sloughhouse	Sacramento
S. C. Hodges & Co.	Hollister	San Benito
W. O. MacLeod	Hollister	San Benito
M. Irimini	San Juan	San Benito
Richard H. Flint	San Juan Bautista	San Benito
Nat Vanetti	San Juan Bautista	San Benito
A. Bianchi	Ripon	San Joaquin
Henry Finck	Stockton	San Joaquin
A. C. Housken	Thornton	San Joaquin
Carpenter Cheese Co.	Woodbridge	San Joaquin
Joe Tonascia	Arroyo Grande	San Luis Obispo
M. G. Salmini	Harmony	San Luis Obispo
Clark & Marzarini	San Miguel	San Luis Obispo
Bettencourt Bros.	Half Moon Bay	San Mateo
Leonardi Bros.	Half Moon Bay	San Mateo
Antone M. Rebeiro	Half Moon Bay	San Mateo
Bertao, Cardozza & Weeks	La Honda	San Mateo
A. Fayal	La Honda	San Mateo
E. and A. Guerra	La Honda	San Mateo
Felix Guerra	La Honda	San Mateo
J. and F. Guerra	La Honda	San Mateo
James Zanoni	La Honda	San Mateo
John Azevedo & Co.	Pescadero	San Mateo
Cardoza & Garcia	Pescadero	San Mateo
Manuel Dias	Pescadero	San Mateo
Isadore Machado & Co.	Pescadero	San Mateo
V. Mattei	Pescadero	San Mateo
J. Pearson	Pescadero	San Mateo
Serpa & Azavedo	Pescadero	San Mateo
Shaw Bros.	Pescadero	San Mateo
Mrs. E. A. Steele	Pescadero	San Mateo
R. E. Steele, Inc.	Pescadero	San Mateo
U. L. Willson	Pescadero	San Mateo
Manuel S. Calderia	San Gregorio	San Mateo
Antone Enos	San Gregorio	San Mateo
Serafim Machado	San Gregorio	San Mateo
J. T. Nunez	San Gregorio	San Mateo
Model Dairy and Produce Co.	Guadaloupe	Santa Barbara

CHEESE FACTORIES KNOWN IN OPERATION IN STATE.—Concluded.

Name	Address	County
U. Tognazzani	Guadaloupe	Santa Barbara
M. Pelucca	Los Olivos	Santa Barbara
B. Acquistapace	Gilroy	Santa Clara
Richard Brem	Gilroy	Santa Clara
Chesbro & Sperber	Gilroy	Santa Clara
Mrs. Annabelle Ellis	Gilroy	Santa Clara
R. Eschenberg	Gilroy	Santa Clara
B. Frassetti	Gilroy	Santa Clara
F. M. Frazell	Gilroy	Santa Clara
Louis Galli	Gilroy	Santa Clara
A. Gubser	Gilroy	Santa Clara
Joseph Hosang	Gilroy	Santa Clara
B. Leonard	Gilroy	Santa Clara
Charles C. Lester	Gilroy	Santa Clara
Oliver Orr	Gilroy	Santa Clara
White & Sawyer	Gilroy	Santa Clara
C. R. Willson	Gilroy	Santa Clara
A. E. Wood	Gilroy	Santa Clara
V. Vanoni	Gilroy	Santa Clara
Associated Milk Producers Association	Lawrence	Santa Clara
H. Bonetti	San Jose	Santa Clara
B. Zanoni	Santa Clara	Santa Clara
James F. Fillipini	Davenport	Santa Cruz
A. Moccetini	Davenport	Santa Cruz
Moretti & Iacopetti	Davenport	Santa Cruz
S. T. Winterhalter	Davenport	Santa Cruz
Peter Guidici	Santa Cruz	Santa Cruz
Major Bros.	Santa Cruz	Santa Cruz
J. A. Scaroni	Santa Cruz	Santa Cruz
Gianoni Bros.	Swanton	Santa Cruz
W. F. Steele	Swanton	Santa Cruz
P. Badasci	Watsonville	Santa Cruz
H. C. Watson	McArthur	Shasta
Antone E. Dotta	Loyalton	Sierra
H. E. Norris	Edgewood	Siskiyou
Mrs. Minnie Patton Egli	Fort Jones	Siskiyou
Fort Jones Creamery and Packing Co.	Fort Jones	Siskiyou
Scott Valley Cheese Manufacturing Co.	Fort Jones	Siskiyou
P. Giacomini	Macdoel	Siskiyou
J. Robustellini	Montague	Siskiyou
J. Scala	Montague	Siskiyou
Shasta Cheese Factory	Montague	Siskiyou
E. Cantell	Petaluma	Sonoma
Mission Creamery	Sonoma	Sonoma
E. Fiaccodori	Valley Ford	Sonoma
Antone Yory & Bro.	Ceres	Stanislaus
Luchessa Bros.	Hickman	Stanislaus
Ben Durrer	Modesto	Stanislaus
S. Lombardi	Modesto	Stanislaus
Sam Massera	Modesto	Stanislaus
Modesto Creamery	Modesto	Stanislaus
Olivera & Yrigoyen	Modesto	Stanislaus
Jacob Grischott	Newman	Stanislaus
Carpenter Cheese Co.	Salida	Stanislaus
Fassler Bros.	Nicolaus	Sutter
Minden Bros.	Nicolaus	Sutter
Frank Schibbig	Nicolaus	Sutter
David Finch	Verona	Sutter
A. Luiggi	Verona	Sutter
Mrs. Mary Wills	Goshen	Tulare
R. Orsi	Tulare	Tulare
John Steiner	Visalia	Tulare
University Farm	Davis	Yolo
Schuler Bros.	Marysville	Yuba
Albin Sheiber	Wheatland	Yuba

FINANCIAL STATEMENT.

Sixty-sixth Fiscal Year.

Available Funds.		
Appropriation	$25,000 00	
Fees collected	1,954 27	
Balance from sixty-fifth fiscal year	3,383 08	
		$30,337 35
Disbursements.		
Freitas, M. T., per diem and expenses	$45 00	
Murphy, J. R., per diem and expenses	102 50	
Nissen, E. P., per diem and expenses	70 95	
Andreasen, F. W., salary	2,400 00	
Andreasen, F. W., traveling expenses	256 35	
Andreason, Jas. C., salary	1,385 00	
Andreason, Jas. C., traveling expenses	1,120 40	
Canham, J. S., salary	1.480 00	
Canham, J. S., traveling expenses	1.013 26	
Coulter, Maurice E., salary	612 00	
Coulter, Maurice E., traveling expenses	580 34	
Hasson, Ray, salary	1.478 75	
Hasson, Ray, traveling expenses	748 07	
Hoyt, Chester F., salary	1,800 00	
Hoyt, Chester F., traveling expenses	93 96	
Hynding, John, salary	1.135 00	
Hynding, John, traveling expenses	687 97	
Nye, Harris T., salary	1.241 50	
Nye, Harris T., traveling expenses	1,058 13	
Pfitzer, L. H., salary	975 00	
Pfitzer, L. H., traveling expenses	687 90	
Severin, J. H., salary	272 50	
Severin, J. H., traveling expenses	273 32	
Smith, James, salary	615 00	
Smith, James, traveling expenses	509 10	
Starkweather, C. A., salary	1,475 00	
Starkweather, C. A., traveling expenses	759 89	
Watson, Samuel E., salary	1.435 00	
Watson, Samuel E., traveling expenses	1,018 05	
Clerk, salary	900 00	
Laboratory equipment	414 81	
Laboratory expenses	99 38	
Office expenses	955 45	
Unexpended balance	2,637 77	
		$30.337 35

FINANCIAL STATEMENT—Continued.

Sixty-seventh Fiscal Year.

Available Funds.		
Appropriation	$30,000 00	
Fees collected	2,285 26	
		$32,285 26
Disbursements.		
Freitas, M. T., per diem and expenses	$33 75	
Murphy, J. R., per diem and expenses	98 10	
Nissen, E. P., per diem and expenses	102 00	
Andreasen, F. W., salary	2,400 00	
Andreasen, F. W., traveling expenses	177 30	
Andreason, Jas. C., salary	1,435 00	
Andreason, Jas. C., traveling expenses	1,107 68	
Cameron, Hugh D., salary	234 00	
Cameron, Hugh D., traveling expenses	216 45	
Canham, J. S., salary	510 00	
Canham, J. S., traveling expenses	330 85	
Coulter, Maurice E., salary	1,340 00	
Coulter. Maurice E., traveling expenses	1,180 60	
Hasson, Ray, salary	1,498 75	
Hasson, Ray, traveling expenses	947 30	
Hoyt, Chester F., salary	1,800 00	
Hoyt, Chester F., traveling expenses	76 36	
Hynding, John, salary	1,210 00	
Hynding, John, traveling expenses	763 87	
Nye, Harris T., salary	1,375 00	
Nye, Harris T., traveling expenses	1,102 20	
Severin, J. H., salary	1,198 50	
Severin, J. H., traveling expenses	1,213 37	
Starkweather, C. A., salary	1,465 00	
Starkweather, C. A., traveling expenses	805 29	
Watson, Samuel E., salary	1,440 00	
Watson, Samuel E., traveling expenses	823 27	
Whitaker, Ira D., salary	742 50	
Whitaker, Ira D., traveling expenses	791 71	
Allen, E. V., traveling expenses	5 40	
Clerk, salary	879 65	
Laboratory equipment	83 85	
Laboratory expenses	116 91	
Office expenses	1,190 95	
Unexpended balance	3,589 65	
		$32,285 26

COURT PROCEEDINGS.

From December 1, 1914 to November 30, 1916.

No.	Defendant	Address	Charge	Result
1	G. E. Savory	Santa Rosa	Insanitary dairy	Case dismissed
2	E. Lafranchi	Santa Rosa	Insanitary dairy	Case dismissed
3	Antone Merga	Valley Ford	Insanitary dairy	Fined $20
4	R. C. Grange	El Centro	Insanitary dairy	Fined $10
5	R. Ambrosina	El Centro	Insanitary dairy	Fined $10
6	G. Whitlock	Holtville	Insanitary dairy	Fined $15
7	J. W. Blanchard	Holtville	Insanitary dairy	Fined $15
8	J. F. Rogers	Holtville	Insanitary dairy	Fined $15
9	J. E. Hodge	Holtville	Insanitary dairy	Fined $15
10	N. Duss	El Centro	Insanitary dairy	Fined $10
11	A. Vander Linden	Holtville	Insanitary dairy	Fined $15
12	R. Vander Linden	Holtville	Insanitary dairy	Fined $15
13	N. Roset	Holtville	Insanitary dairy	Fined $15
14	Tony Contente	Holtville	Insanitary dairy	Fined $15
15	Manuel Lopez	Holtville	Insanitary dairy	Fined $15
16	W. C. Oakley	Los Alamos	Insanitary dairy	Fined $20
17	B. Basca	Orcutt	Insanitary dairy	Fined $25
18	Adolph Belezzuoli	Hanford	Insanitary dairy	Fined $30
19	Tony Amarant	Salinas	Insanitary dairy	Fined $30
20	H. Frost	El Centro	Insanitary dairy	Fined $25
21	H. T. Evans	El Centro	Interfering with inspector	Acquitted
22	W. T. Mitchell	Tomales	Insanitary dairy	Fined $20
23	C. A. Frazee	Hynes	Milk adulteration	Fined $25
24	C. E. Wilson	Long Beach	Insanitary dairy	Fined $10
25	George L. Pease	Long Beach	Insanitary dairy	Fined $10
26	A. M. Vierra	Selma	Insanitary dairy	Fined $25
27	Charles Berri	Hollister	Insanitary dairy	Fined $10
28	Antone Taix, Sr.	San Juan	Insanitary dairy	Fined $10
29	Justin Lacasta	Holtville	Insanitary dairy	Fined $10
30	Tagaki-Matthis	El Centro	Insanitary dairy	Fined $15
31	L. Tiechrieb	Bell	Insanitary dairy	Fined $10

32	L. Tiechrieb	Bell	Milk adulteration	Sentence suspended
33	J. Headley	Bell	Milk adulteration	Fined $25
34	Bruce Cull	Hermosa Beach	Insanitary dairy	Fined $25
35	Sacramento Valley Merc. Co.	Princeton	Short weight butter	Fined $20
36	G. and J. Montegge	Princeton	Insanitary dairy	Fined $30
37	Manuel Cunha	Watsonville	Insanitary dairy	Sentence suspended
38	A. J. Anderson	Newman	Insanitary dairy	Fined $25
39	Manuel Machado	Newman	Insanitary dairy	Fined $25
40	Frank N. Silva	Tulare	Insanitary dairy	Fined $20
41	L. C. Marcotti	Venice	Insanitary dairy	Fined $10
42	N. Croce	El Centro	Insanitary dairy	Fined $15
43	Frank Martin	Gustine	Insanitary dairy	Fined $25
44	M. S. Brazil	Marysville	Insanitary dairy	Fined $20
45	Henry Brunken	Salinas	Insanitary dairy	Fined $10
46	M. Quilla	Salinas	Insanitary dairy	Fined $15
47	T. E. Erickson	Kerman	Insanitary dairy	Fined $10
48	J. C. Ashlin	Kerman	Insanitary dairy	Fined $10
49	J. M. Toste	Kerman	Insanitary dairy	Fined $10
50	Gerry Pura	Gonzales	Insanitary dairy	Fined $10
51	Hugh Holthouse	San Jose	Insanitary dairy	Sentence suspended
52	L. Fernandez	Holtville	Insanitary dairy	Fined $15
53	Joseph Quaini	Greenwood	Insanitary dairy	Fined $10
54	M. C. Mendes	Laton	Insanitary dairy	Fined $10
55	G. Martella	San Jose	Insanitary dairy	Fined $10
56	Joe Sonognini	San Jose	Milk adulteration	Sentence suspended
57	A. L. Louie	Modesto	Milk adulteration	Fined $25
58	C. Coggins	El Centro	Insanitary dairy	Fined $10
59	Peter Poiani	Manchester	Insanitary dairy	Fined $10
60	Paul Bassi	Elk	Insanitary dairy	Fined $10
61	J. C. Magruder	Brawley	Insanitary dairy	Case dismissed
62	L. Sanders	Imperial	Insanitary dairy	Fined $25
63	L. Fachin	Calexico	Insanitary dairy	Fined $15
64	R. V. Thomsen	El Centro	Insanitary dairy	Fined $10
65	Antone Seha	Woodland	Insanitary dairy	Fined $15
66	Philip Scolari	Lompoc	Insanitary dairy	Fined $10
67	A. Perozzi	Surf	Insanitary dairy	Fined $10
68	F. Benemati	Sudden	Insanitary dairy	Fined $10
69	A. Dettamanti	Lompoc	Insanitary dairy	Fined $10

COURT PROCEEDINGS—Continued.

From December 1, 1914 to November 30, 1916.

No.	Defendant	Address	Charge	Result
70	A. Nibola	Surf	Insanitary dairy	Fined $10
71	J. E. Hodge	Imperial	Insanitary dairy	Fined $15
72	Antone Faix	San Juan	Insanitary dairy	Fined $10
73	Peter Canapi	San Felipe	Insanitary dairy	Fined $10
74	A. L. Laffer	Imperial	Insanitary dairy	Sentence suspended
75	Bontaglio & Bordeger	Heber	Insanitary dairy	Fined $15
76	Harat Bros.	Heber	Insanitary dairy	Fined $15
77	R. F. Pinkham	Santa Barbara	Insanitary dairy	Fined $10
78	O. Baker	Live Oak	Insanitary dairy	Fined $10
79	J. S. Roderiguez	Ventura	Insanitary dairy	Fined $10
80	J. A. Borges	Lemoore	Insanitary dairy	Fined $20
81	H. Hobbs	Dos Palos	Insanitary dairy	Fined $10
82	J. L. Avila	Dos Palos	Insanitary dairy	Fined $10
83	L. Mello	Dos Palos	Insanitary dairy	Fined $25
84	A. Cadazzi	Dos Palos	Insanitary dairy	Fined $10
85	C. Del Bono	Madera	Insanitary dairy	Fined $10
86	R. R. Precido	Madera	Insanitary dairy	Fined $10
87	C. F. Scheffing	Madera	Insanitary dairy	Fined $10
88	A. Boninni	South Bay	Insanitary dairy	Fined $20
89	Tom Castro	Agnew	Insanitary dairy	Fined $10
90	M. V. Rose	Lawrence	Insanitary dairy	Fined $10
91	James Connor	Glendale	Milk adulteration	Sentence suspended
92	William Morgan	Glendale	Insanitary dairy	Fined $20
93	R. H. Whitten	Glendale	Milk adulteration	Fined $25
94	M. E. Dias	Mill Valley	Milk adulteration	Case dismissed
95	T. Dykenul	South Pasadena	Insanitary dairy	Fined $10
96	Frank Martin	Corcoran	Insanitary dairy	Fined $25
97	F. C. Mello	Corcoran	Insanitary dairy	Fined $25
98	Mart Raven	Corcoran	Insanitary dairy	Fined $25
99	Peter Rietkerk	Corcoran	Insanitary dairy	Fined $25
100	Jos. C. Silva	Soledad	Insanitary dairy	Fined $10
101	Andrew Jensen	Camden	Selling colostrum milk	Fined $40

102	D. Bregazzi	Stratford	Insanitary dairy	Fined $20
103	John Mendes	Stratford	Insanitary dairy	Fined $20
104	Joaquin M. Caveiro	Hanford	Insanitary dairy	Fined $30
105	A. L. Wimer	Kerman	Insanitary dairy	Fined $10
106	C. R. Schlotthauer	Barstow	Insanitary dairy	Fined $10
107	Joe Legari	Kerman	Insanitary dairy	Fined $10
108	J. Stamas	Redondo Beach	Ice cream adulteration	Fined $25
109	Frank Sousa	Sanger	Insanitary dairy	Fined $10
110	J. M. Silva	Sanger	Insanitary dairy	Fined $20
111	Manuel S. Caldeira	San Gregorio	Insanitary dairy	Fined $10
112	Charles Simon	Montague	Milk adulteration	Fined $25
113	Kee Hong	Yreka	Milk adulteration	Fined $25
114	Wong Fong	Yreka	Milk adulteration	Fined $25
115	Manuel Shelley	Yreka	Insanitary dairy	Fined $25
116	C. H. Morrison	Yreka	Milk adulteration	Fined $25
117	H. E. Norris	Edgewood	Short weight butter	Sentence suspended
118	H. Wells	Edgewood	Short weight butter	Sentence suspended
119	Ernest and John Scott	Edgewood	Insanitary dairy	Sentence suspended
120	Lee Chung	Sisson	Milk adulteration	Fined $10
121	Wong Loy	Sisson	Milk adulteration	Fined $10
122	E. S. Shipp	Fresno	Neglecting to have name on milk wagon	Fined $25
123	R. H. McGuggin	Fresno	Neglecting to have name on milk wagon	Fined $25
124	D. M. Wilson	Kerman	Insanitary dairy	Fined $15
125	E. C. Page	Fresno	Insanitary dairy	Fined $10
126	Ferreira & Thomas	Porterville	Insanitary dairy	Fined $20
127	Jos. Bettencourt	Martinez	Insanitary dairy	Fined $10
128	Jos. Macedo	Martinez	Insanitary dairy	Fined $10
129	John Terry	Crows Landing	Insanitary dairy	Fined $10
130	S. Naka	Red Bluff	Milk adulteration	Fined $25
131	Gin Que	Red Bluff	Milk adulteration	Fined $25
132	C. S. Elder	Red Bluff	Milk adulteration	Fined $25
133	Jok Kee	Red Bluff	Milk adulteration	Fined $25
134	Joe Violini	Salinas	Insanitary dairy	Fined $10
135	B. Corda	Gonzales	Insanitary dairy	Fined $10
136	J. B. Silveira	Richmond	Short weight butter	Fined $25
137	M. S. Rose	Newman	Insanitary dairy	Fined $25
138	Martin & Olivera	Gustine	Insanitary dairy	Fined $25
139	Joaquin F. Alves	Gustine	Insanitary dairy	Fined $25

COURT PROCEEDINGS—Continued.

From December 1, 1914 to November 30, 1916.

No.	Defendant	Address	Charge	Result
140	A. P. Kinser	Ingomar	Insanitary dairy	Fined $25
141	George Costa	Arcata	Insanitary dairy	Fined $20
142	M. P. Rocha	Arcata	Insanitary dairy	Fined $20
143	Manuel B. Rebeira	Hanford	Insanitary dairy	Fined $25
144	Frank G. Fereira	Hanford	Insanitary dairy	Fined $30
145	C. Economedis	El Centro	Insanitary dairy	Fined $15
146	Ambrosini & Bijiolli	Holtville	Insanitary dairy	Fined $25
147	C. E. Shattuck	Glendale	Insanitary dairy	Fined $10
148	Manuel Serpa	Pixley	Insanitary dairy	Fined $25
149	Wong Dan	Weed	Milk adulteration	Case dismissed
150	Wong Louie	Weed	Milk adulteration	Acquitted
154	Miral Peterson	Red Bluff	Insanitary dairy	Fined $10
155	Wright Bros.	Fort Jones	Insanitary dairy	Fined $15
156	John Silva	Fort Jones	Insanitary dairy	Fined $35
157	Alexander Terra	Etna	Insanitary dairy	Fined $20
158	Joe A. Alves	Lemoore	Insanitary dairy	Fined $15
159	Joe M. Luiz	Oroville	Insanitary dairy	Fined $15
160	John M. Luiz	Oroville	Insanitary dairy	Fined $15
161	A. V. Costa	Oroville	Insanitary dairy	Fined $15
162	Robinson & Sons	Holtville	Insanitary dairy	Fined $15
163	F. Ernestine	El Centro	Insanitary dairy	Sentence suspended
164	D. Rogers	Holtville	Insanitary dairy	Fined $10
165	Joe Pigario	Salida	Insanitary dairy	Fined $12 50
166	Matthew Pigario	Salida	Insanitary dairy	Fined $12 50
167	John Gallizza	Salida	Insanitary dairy	Fined $25
168	Stefani & Perocelli	Salida	Insanitary dairy	Fined $25
169	Jesse Miller	Modesto	Insanitary dairy	Fined $20
170	J. R. Rocha	Los Banos	Insanitary dairy	Fined $25
171	J. E. Trafton	Watsonville	Insanitary dairy	Fined $10
172	Joe Morely	Bakersfield	Neglecting to have name on milk wagon	Fined $25
173	Anderson & Neilson	Santa Cruz	Short weight butter	Fined $20
174	Manuel Lemos	Martinez	Insanitary dairy	Case dismissed
175	Jos. Silva Azavedo	West Berkeley	Insanitary dairy	Case dismissed

176	Antonio Teixera	Martinez	Insanitary dairy	Case dismissed
177	Steve Grossi	Germantown	Insanitary dairy	Fined $30
178	A. S. Fayal	Pescadero	Insanitary dairy	Fined $25
179	M. Leal	Sausalito	Insanitary dairy	Fined $20
180	H. Goedinghouse	Bishop	Insanitary dairy	Fined $10
181	Antone Perry	Mill Valley	Insanitary dairy	Fined $20
182	Luis Giacomazzi	Hanford	Insanitary dairy	Fined $75
183	Marysville Creamery	Marysville	Underreading cream tests	Acquitted
184	Nielson & Madsen	San Jose	Short weight butter	Acquitted
185	J. Britschzi	Menlo Park	Insanitary dairy	Acquitted
186	N. E. Hayes	Fort Jones	Interfering with inspector	Fined $75
187	E. M. Moore	Glendale	Milk adulteration	Acquitted
188	Gamma & Gamma	Salinas	Insanitary dairy	Fined $20
189	Joe Casperi	Manchester	Insanitary dairy	Fined $10
190	James Bertola	Manchester	Insanitary dairy	Fined $10
191	W. J. Guglielmetti	Petaluma	Insanitary dairy	Fined $10
192	F. Casini	Petaluma	Insanitary dairy	Fined $10
193	I. Pronini	Petaluma	Insanitary dairy	Fined $10
194	E. C. Hardacre	Orland	Insanitary dairy	Fined $10
195	Magnus Peters	Orland	Insanitary dairy	Fined $10
196	A. Vanoni	Heber	Insanitary dairy	Fined $10
197	Ed. Biaggini	Cayucos	Insanitary dairy	Fined $25
198	A. Salacci	Cayucos	Insanitary dairy	Fined $25
199	Frank Beggs	Petaluma	Insanitary dairy	Fined $10
200	M. Francis	Gridley	Insanitary dairy	Fined $10
201	F. G. Dutra	Santa Maria	Insanitary dairy	Sentence suspended
202	Joe Josephs	San Juan	Insanitary dairy	Fined $10
203	Frank Lorenzo	Loleta	Insanitary dairy	Fined $20
204	A. J. Silva	Clarksburg	Insanitary dairy	Fined $15
205	M. C. Azevedo	Novato	Milk adulteration	Fined $25
206	Mrs. A. C. May	Glendale	Insanitary dairy	Fined $10
207	Joseph Anderegg	Riverside	Insanitary dairy	Fined $25
208	E. D. Pidge	Brawley	Insanitary dairy	Fined $15
209	T. A. McFarland	Brawley	Insanitary dairy	Fined $15
210	Pichetti Bros.	Brawley	Insanitary dairy	Fined $10
211	C. Roher	Holtville	Insanitary dairy	Fined $15
212	Lloyd Cookson	Buena Park	Insanitary dairy	Fined $10
213	Felipe Salamini	Greenfield	Insanitary dairy	Fined $20

COURT PROCEEDINGS—Continued.

From December 1, 1914 to November 30, 1916.

No.	Defendant	Address	Charge	Result
214	A. Peverini	Soledad	Insanitary dairy	Fined $20
215	J. T. Thompson	Soledad	Insanitary dairy	Fined $20
216	David Binsacca	Soledad	Insanitary dairy	Fined $20
217	John Ferrini	San Ardo	Insanitary dairy	Fined $20
218	Achille Pozzi	Chualar	Insanitary dairy	Fined $15
219	H. E Campbel	Fairfield	Insanitary dairy	Fined $20
220	F. Yardi	Holtville	Insanitary dairy	Fined $15
221	C. Nonella	Holtville	Insanitary dairy	Fined $15
222	J. T. and J. H. Harris	Woodland	Insanitary dairy	Fined $10
223	Bijiolli & Ambrosini	Holtville	Insanitary dairy	Fined $50
224	A. J. Borba	Hanford	Insanitary dairy	Fined $10
225	H. J. Doulton	Montecito	Insanitary dairy	Fined $5
226	M. A. Lateija	Mill Valley	Milk adulteration	Fined $100
227	Goss & McNiel	Holtville	Insanitary dairy	Case dismissed
228	I. L. Brown	Tustin	Insanitary dairy	Fined $10
229	A. S. Hall	Petaluma	Insanitary dairy	Fined $10
230	F. R. Parker	Chico	Insanitary dairy	Fined $10
231	K. Turschuur	Holtville	Insanitary dairy	Fined $25
232	W. L. Garlock	San Jose	Short weight butter	Fined $10
233	H. C. Samuels	Willows	Insanitary dairy	Case dismissed
234	E. D. Barney	Elk Grove	Insanitary dairy	Case dismissed
235	A. A. Bartholf	Elk Grove	Insanitary dairy	Fined $10
236	M. V. Bettencourt	Gilroy	Insanitary dairy	Fined $10
237	Richards & Romari	Oakdale	Insanitary dairy	Fined $25
238	P. Labrucherie	Holtville	Insanitary dairy	Fined $15
239	Willows Creamery	Willows	Reporting false cream tests	Fined $25
240	O. D. Couch	Whittier	Insanitary dairy	Fined $10
241	Frank Merckle	Long Beach	Selling unclean milk	Fined $10
242	V. Bello	Dos Palos	Insanitary dairy	Fined $10
243	F. W. Merrell	Dos Palos	Insanitary dairy	Fined $10
244	Manuel Alves	San Juan Bautista	Insanitary dairy	Fined $10
245	Peter Badasci	Watsonville	Insanitary dairy	Fined $10
246	J. R. Abbott	Alhambra	Selling unclean milk	Case dismissed

247	A. A. Channell	Fresno	Insanitary dairy	Fined $10
248	Silvera & Monet	Turlock	Insanitary dairy	Fined $25
249	L. Kirk	Watsonville	Milk adulteration	Fined $25
250	George Hreprich	Watsonville	Milk adulteration	Fined $25
251	G. S. Moyer	Chino	Insanitary dairy	Fined $10
252	Ed Elder	Porterville	Milk adulteration	Fined $25
253	Joe Fumasi	Napa	Insanitary dairy	Fined $10
254	A. H. Wallace	Alhambra	Milk adulteration	Fined $25
255	E. R. Dixon	Los Angeles	Milk adulteration	Fined $25
256	A. C. Stevens	Live Oak	Insanitary dairy	Fined $10
257	John Noir	Live Oak	Insanitary dairy	Fined $10
258	L. H. Frembling	Kerman	Insanitary dairy	Fined $10
259	Charles Momsen	Petaluma	Selling unclean milk	Fined $10
260	S. W. Jones	Petaluma	Selling unclean milk	Fined $10
261	Thomas Barrett	Petaluma	Selling unclean milk	Fined $10
262	A. Avilla	Petaluma	Selling unclean milk	Fined $10
263	James Tassi	Petaluma	Selling unclean milk	Fined $10
264	Charles Campigli	Petaluma	Selling unclean milk	Fined $10
265	J. L. Azavedo	Petaluma	Selling unclean milk	Fined $10
266	D. Clausen	Petaluma	Selling unclean milk	Fined $10
267	N. P. Segard	Petaluma	Selling unclean milk	Fined $10
268	Jensen & Olsen	Petaluma	Selling unclean milk	Fined $10
269	A. Pelger	El Centro	Insanitary dairy	Fined $15
270	B. Dominigoni	El Centro	Insanitary dairy	Fined $50
271	F. G. Rico	Gridley	Insanitary dairy	Fined $10
272	D. Scattini	Gonzales	Insanitary dairy	Fined $20
273	Dr. H. J. Stevens	Santa Ana	Insanitary dairy	Fined $10
274	Joe Avilla	Santa Barbara	Insanitary dairy	Fined $10
275	T. Eggles	Woodland	Selling unclean milk	Fined $20
276	Charles D. Gust	Williams	Milk adulteration	Acquitted
277	John Pronsini	Novato	Milk adulteration	Fined $25
278	Antone Ferriera	Castroville	Non-cooling of milk	Fined $10
279	Antone Amarante	Castroville	Non-cooling of milk	Fined $20
280	John Luini	Princeton	Milk adulteration	Fined $50
281	R. Orosi	Tulare	Insanitary dairy	Fined $75
282	Coelho Bros.	Tipton	Insanitary dairy	Fined $20
283	C. E. Shattuck	Glendale	Insanitary dairy	Fined $15
284	Mrs. C. S. Lane	Santa Barbara	Insanitary dairy	Sentence suspended
285	Fernandes Bros.	Turlock	Non-cooling of cream	Fined $25

COURT PROCEEDINGS—Continued.

From December 1, 1914 to November 30, 1916.

No.	Defendant	Address	Charge	Result
286	S. Rosini	Modesto	Non-cooling of cream	Fined $25
287	C. E. Kelly	Soledad	Insanitary dairy	Fined $20
288	James Kennedy	El Centro	Failing to obtain oleomargarine license	Fined $50
289	P. M. Peterson	Fresno	Reporting false test	Case dismissed
290	F. P. Sampson	Porterville	Insanitary dairy	Fined $25
291	Joaquin Luceo	Tulare	Insanitary dairy	Fined $10
292	Frank Coelho	Tulare	Insanitary dairy	Fined $10
293	Joe Correia	Tulare	Insanitary dairy	Fined $10
294	W. M. Stedding	Kerman	Insanitary dairy	Fined $10
295	W. H. Lewis	Kerman	Insanitary dairy	Sentence suspended
296	E. Bellach	Kerman	Insanitary dairy	Fined $10
297	A. Sonderberg	Kerman	Insanitary dairy	Fined $10
298	C. Smith	Fresno	Insanitary dairy	Fined $10
299	Judson Apply	Fresno	Insanitary dairy	Fined $10
300	C. Englund	Fresno	Insanitary dairy	Fined $10
301	A. C. Silveira	Laton	Insanitary dairy	Fined $10
302	A. R. Northern	Madera	Milk adulteration	Case dismissed
303	George Thanash	Madera	Milk adulteration	Fined $25
304	Ah Louie	Madera	Milk adulteration	Fined $25
305	John Neilson	Santa Cruz	Milk adulteration	Acquitted
306	John Froletta	San Ardo	Insanitary dairy	Fined $10
307	W. A. Barber	Riverside	Insanitary dairy	Fined $10
308	Joe Suy	Orland	Milk adulteration	Fined $10
309	A. J. Alves	Laton	Insanitary dairy	Fined $15
310	M. S. Mendonca	Brawley	Insanitary dairy	Fined $15
311	M. S. Nunes	San Jose	Insanitary dairy	Fined $15
312	Fred Taylor	Riverdale	Insanitary dairy	Acquitted
313	Joe Theodore	Hanford	Insanitary dairy	Fined $10
314	A. S. Avila	Hanford	Insanitary dairy	Fined $10
315	Michael Schlentz	Woodland	Milk adulteration	Sentence suspended
316	W. G. Gilcrease	Lemoore	Insanitary dairy	Fined $10
317	John V. Madruga	Lemoore	Insanitary dairy	Fined $10

318	F. A. Machado	Ocean Park	Insanitary dairy	Fined $10
319	P. Zubani	Holtville	Insanitary dairy	Case dismissed
320	F. Zubani	Holtville	Insanitary dairy	Fined $15
321	Joe Maxenti	Los Banos	Insanitary dairy	Fined $10
322	Manuel P. Avilla	Chowchilla	Insanitary dairy	Fined $20
323	John Faria	Chowchilla	Insanitary dairy	Fined $20
324	John M. Cotta	Chowchilla	Insanitary dairy	Fined $20
325	H. Lopez	Hanford	Insanitary dairy	Fined $10
326	Gaspar Rusconi	Selma	Insanitary dairy	Fined $15
327	F. W. Woodhouse	Monmouth	Insanitary dairy	Fined $10
328	B. G. Settle	Bowles	Insanitary dairy	Fined $10
329	C. Fernandes	Delano	Insanitary dairy	Fined $10
330	Theodore Petersen	Ballard	Insanitary dairy	Fined $20
331	N. Georgi	Gaviota	Insanitary dairy	Fined $20
332	R. M. West	Weed	Insanitary dairy	Fined $10
333	John Foster	San Jose	Insanitary dairy	Fined $25
334	M. R. Calhoun	Bishop	Insanitary dairy	Fined $10
335	John Neilson	Santa Cruz	Milk adulteration	Case dismissed
336	Mateo Scolari	Blythe	Insanitary dairy	Fined $15
337	M. Sullivan	Venice	Insanitary dairy	Sentence suspended
338	L. Manfrino	Lompoc	Insanitary dairy	Fined $10
339	F. Benemati	Lompoc	Insanitary dairy	Fined $10
340	F. Bisi	Point Conception	Insanitary dairy	Fined $10
341	S. Colli	Surf	Insanitary dairy	Fined $10
342	Joe Chiodi	Lompoc	Insanitary dairy	Fined $10
343	J. Guerra	Lompoc	Insanitary dairy	Fined $10
344	Joe Matasci	Lompoc	Insanitary dairy	Fined $10
345	D. Cavalli	Casmalia	Insanitary dairy	Fined $20
346	F. G. Dutra	Casmalia	Insanitary dairy	Fined $20
347	A. Cossa	Guadaloupe	Insanitary dairy	Fined $20
348	C. Pedroncelli	Guadaloupe	Selling cream from diseased animals	Fined $20
349	C. Rusconi	Guadaloupe	Insanitary dairy	Fined $20
350	A. Morganti	Guadaloupe	Insanitary dairy	Fined $20
351	John Cardoza	Pescadero	Insanitary dairy	Fined $10
352	Antone Azevedo	Pescadero	Insanitary dairy	Fined $10
353	L. Blanc	Bishop	Insanitary dairy	Fined $10
354	J. and T. Baptista	Porterville	Insanitary dairy	Fined $20
355	Masdonati & Ostini	Alpaugh	Insanitary dairy	Fined $30

COURT PROCEEDINGS—Continued.

From December 1, 1914 to November 30, 1916.

No.	Defendant	Address	Charge	Result
356	A. Perozzi	Surf	Insanitary dairy	Fined $10
357	Frank E. Jones	Santa Ana	Insanitary dairy	Acquitted
358	R. R. Crawford	Fort Jones	Insanitary dairy	Fined $10
359	Reed, Wells & Reed	McFarland	Insanitary dairy	Fined $10
360	Marion Ratekin	McFarland	Insanitary dairy	Fined $10
361	John Gobbi	Bodega	Insanitary dairy	Fined $10
362	C. Raveilli	Weed	Selling unclean milk	Fined $10
363	F. Madonna	Half Moon Bay	Insanitary dairy	Fined $10
364	Matt C. Callan	Colma	Insanitary dairy	Sentence suspended
365	J. McKnight	Menlo Park	Insanitary dairy	Sentence suspended
366	Arthur Erickson	Orland	Insanitary dairy	Fined $10
367	Antone Silva	Gustine	Insanitary dairy	Fined $25
368	Joe P. Gomes	Gustine	Insanitary dairy	Fined $25
369	David Sorenson	Fortuna	Insanitary dairy	Fined $25
370	M. G. Soares	Colton	Insanitary dairy	Fined $10
371	A. Alvernaz	Yuba City	Insanitary dairy	Fined $20
372	D. Sinigiani	Orland	Non-cooling of cream	Fined $10
373	M. Ramos	Los Banos	Insanitary dairy	Fined $10
374	M. J. Bento	Los Banos	Insanitary dairy	Fined $10
375	Henry Haas	Fresno	Insanitary dairy	Fined $20
376	Herbert Melgard	Fresno	Insanitary dairy	Sentence suspended
377	Jim Moritore	Fresno	Insanitary dairy	Fined $10
378	T. R. Hayes	Fresno	Insanitary dairy	Fined $20
379	Antone Ruffoni	Burrel	Insanitary dairy	Fined $10
380	Lewis Pura	Burrel	Insanitary dairy	Fined $10
381	S. Roticci	Burrel	Insanitary dairy	Fined $10
382	S. Bellando	Burrel	Insanitary dairy	Fined $10
383	Jim Perocelli	Burrel	Insanitary dairy	Fined $10
384	Andrew Kaiser	Germantown	Insanitary dairy	Fined $10
385	G. Marti	Live Oak	Insanitary dairy	Fined $15
386	Rico & Santos	Corcoran	Insanitary dairy	Fined $20
387	G. Volini	Corcoran	Insanitary dairy	Fined $10

388	M. C. Gomez	Corcoran	Insanitary dairy		Fined $20
389	T. G. Boam	Fresno	Insanitary dairy		Fined $10
390	Frank Conto	Fresno	Insanitary dairy		Fined $10
391	Rouix & Gonthier	Gonzales	Insanitary dairy		Fined $20
392	J. B. Black	Lemoore	Insanitary dairy		Fined $15
393	Antone Vierra	Lemoore	Insanitary dairy		Fined $15
394	M. N. Cotta	Lemoore	Insanitary dairy		Fined $15
395	Tony Costa	Lemoore	Insanitary dairy		Fined $10
396	M. N. Perry	Lemoore	Insanitary dairy		Fined $10
397	Hans Voss	Lemoore	Insanitary dairy		Fined $15
398	A. Greyerson	Guernsey	Insanitary dairy		Fined $10
399	M. B. Lemos	Hanford	Insanitary dairy		Fined $10
400	M. S. DeBrun	Hanford	Insanitary dairy		Fined $10
401	A. P. Avilla	Hanford	Insanitary dairy		Fined $10
402	A. G. Silva	Hanford	Insanitary dairy		Fined $10
403	C. C. Dotta	Loyalton	Insanitary dairy		Fined $25
404	P. Guidotti	Los Alamos	Insanitary dairy		Fined $25
405	Miguel Avamboro	Tranquillity	Insanitary dairy		Fined $10
406	C. F. Strehlow	Healdsburg	Selling stale cream		Fined $10
407	Rocca Ghisletta	Petaluma	Insanitary dairy		Fined $10
408	C. Iverson	Petaluma	Selling stale cream		Fined $10
409	J. Mondot	Colma	Milk adulteration (notice of appeal served)		Fined $200
410	P. Rusconi	San Joaquin	Insanitary dairy		Fined $10
411	J. L. Duff	Monmouth	Insanitary dairy		Fined $10
412	John Costa	Hanford	Insanitary dairy		Fined $10
413	W. Verheul	Hanford	Insanitary dairy		Fined $10
414	Tony Fortado	Lanare	Insanitary dairy		Fined $10
415	Nicolaus Biladoni	Lanare	Insanitary dairy		Fined $10
416	Carl Eskesen	Lanare	Insanitary dairy		Fined $10
417	Peter Maasenetti	Lodi	Non-cooling of cream		Fined $15
418	S. A. Stimpson	McFarland	Insanitary dairy		Fined $10
419	M. S. Silva	McFarland	Insanitary dairy		Fined $10
420	Frank Garzoli	McFarland	Insanitary dairy		Fined $10
421	J. Theodor	Live Oak	Selling milk from diseased cow		Fined $15
422	D. Claussen	Petaluma	Selling unclean milk		Fined $25
423	Masadonati & Ostini	Alpaugh	Insanitary dairy		Fined $60

COURT PROCEEDINGS—Concluded.

From December 1, 1914 to November 30, 1916.

No.	Defendant	Address	Charge	Result
424	A. C. Toors	Monmouth	Insanitary dairy	Fined $10
425	John Aguiar	Novato	Milk adulteration	Fined $25
426	W. M. Schrimpf	Laws	Insanitary dairy	Fined $10
427	E. D. Sanders	Bishop	Insanitary dairy	Fined $10
428	F. J. Zimmerman	Novato	Milk adulteration	Fined $25
429	Costa & Fergundes	Patterson	Insanitary dairy	Fined $10
420	J. J. Mattos	Patterson	Insanitary dairy	Fined $10
431	A. S. Mocettini	Soledad	Insanitary dairy	Fined $15
432	Ragzzi & Guidici	Soledad	Insanitary dairy	Fined $10

SUMMARY OF PROSECUTIONS.

Inspector	Number of cases	Successful cases	Sentence suspended	Dismissed	Acquitted
Andreasen, F. W.	1	1	0	0	0
Andreason, James C.	15	14	0	0	1
Cameron, Hugh D.	14	14	0	0	0
Canham, J. S.	46	46	0	0	0
Coulter, Maurice E.	54	50	5	1	3
Hasson, Ray	63	60	5	1	2
Hynding, John P.	7	7	0	0	0
Nye, Harris T.	50	47	2	3	0
Peairs, C. A.	13	13	0	0	0
Pfitzer, L. H.	4	4	0	0	0
Prevost, Herbert	1	1	0	0	0
Severin, J. H.	41	37	4	2	2
Starkweather, C. A.	15	14	0	1	0
Watson, Samuel E.	41	35	0	6	0
Whitaker, Ira D.	64	61	2	2	1
Totals	429	404	18	16	9

The total amount of fines imposed during the two years ending December 1, 1916, for the violation of the dairy laws, is $6,345.00. Half of this amount has been paid to the counties in which the cases have been tried. The other half has been paid to the State Treasurer and has become part of the state school fund.

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REPORT

OF

Joint Legislative Committee

Appointed Pursuant to Assembly Concurrent Resolution No. 26, 1915

CALIFORNIA STATE PRINTING OFFICE
SACRAMENTO.
1917

27503

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LETTER OF TRANSMITTAL

To the members of the Senate and Assembly of the Legislature of California at its forty-second session.

In conformity with the provision of Assembly Concurrent Resolution No. 26, adopted at the session of 1915, there is herewith transmitted to you for your consideration the report of the committee appointed under the terms of such resolution, together with its findings and recommendations as to the matters included in the investigation.

NEWTON W. THOMPSON.
EDW. K. STROBRIDGE.
HOWARD J. FISH.
B. B. MEEK.
W. W. HARRIS.

REPORT.

The legislature of 1915 adopted a resolution (Assembly Concurrent Resolution No. 26), the text of which is as follows:

> WHEREAS, The purchase of textbook plates and the annual payment of royalties amounts to a sum greater than would necessarily be expended if this work was compiled by California authors; and
>
> WHEREAS, There is a sentiment among the school faculties and parents of school children, that the books should be issued in sections to cover a term instead of several years, and used by but one pupil; and
>
> WHEREAS, The issuance of free textbooks to the students of the elementary schools has proved a success, both in educational advantages and economy; therefore, be it
>
> *Resolved by the assembly, the senate concurring,* That the speaker of the assembly shall appoint three members, and the president of the senate shall appoint three members, who shall act as a committee of the legislature to investigate the matters contained in this resolution and the advisability and means of furnishing textbooks free to the students of the secondary schools of the state, and all matters relating thereto, and to report their findings in full to the forty-second session of the legislature; and be it further
>
> *Resolved,* That the committee shall have power to employ a secretary and such other assistants as it may deem necessary, and that the expenses incurred in such investigation, not to exceed the sum of two thousand dollars, shall be paid equally by the assembly and the senate out of their respective contingent funds.

Pursuant to the direction of this resolution, the following were named to act:

Senators Newton W. Thompson,
Edw. K. Strobridge,
D. J. Beban.

Assemblymen Howard J. Fish,
B. B. Meek,
W. W. Harris.

The members met informally in the State Capitol on May 12, 1915, and requested Arthur P. Will, Chief of the Legislative Counsel Bureau, to correspond with the proper officials in various states and to gather such available information as would throw light on the subject before the committee.

Your committee desires to express its hearty appreciation of the efficient assistance rendered by the Legislative Counsel Bureau and the cordial cooperation of the chief of that bureau, Mr. Arthur P. Will, who, at the request of the committee, has acted as secretary for the entire period without compensation. The arrangement thus outlined has enabled the committee to secure efficient assistance and to carry on its work at a minimum expenditure. Any other plan would have required the employment of a permanent secretary for a considerable period of time, and a considerable outlay for clerical assistance.

In conformity with this direction, an identical letter and list of questions was sent to the Superintendent of Public Instruction or equivalent officer in every state and territory under the jurisdiction of the federal government. This letter and questionnaire are printed in the appendix herein as Exhibit ''A'' and Exhibit ''B'' respectively. The responses were prompt and courteous and much information was obtained that has been of value to the committee.

In the latter part of 1915 the United States Bureau of Education published a pamphlet containing the result of an investigation conducted by it which throws considerable light on some of the questions under examination. Copies of this pamphlet (Bulletin, 1915, No. 36—Whole No. 663) were courteously furnished the Legislative Counsel Bureau for the use of your committee.

A call having been issued for a second meeting, four members of the committee met in the State Capitol on November 3, 1915. Two of the senate members were unable to be present at this meeting, one on account of illness and the other by reason of engagement in public work elsewhere. The members present, however, received and discussed the information then on hand and directed that the investigations be pursued.

Before the members came together again, one of their number, Senator D. J. Beban, was removed by death. Senator Beban was an active and loyal public servant. He was deeply interested in the work of the committee, and during their subsequent deliberations the remaining members have realized that they and the public have suffered an appreciable loss.

The next meeting of the committee was held in the State Offices in Los Angeles on March 20, 1916. The committee convened at 10.30 a.m. on that date and continued in session for three days. At this meeting the committee organized by the election of Senator Newton W. Thompson as chairman. Arthur P. Will, Chief of the Legislative Counsel Bureau, was requested to act as secretary of the committee.

The first two days of this session were given over to public hearings. Formal addresses were made by Messrs. Will C. Wood, Commissioner of Secondary Schools; Noel H. Garrison, principal of the Stockton High School, representing the California State Convention of High School Principals, and George Tracy of San Francisco, on behalf of the California Typographical Conference. These addresses are representative of the different viewpoints of various portions of the community, and therefore are reproduced in full in the appendix as Exhibits "C," "D" and "E" respectively. After each address the meeting was thrown open for discussion, and advantage was taken of the opportunity by teachers and by others present to ask for information and to present their views. Among others, the committee heard at this time Messrs. H. W. Dennett, representing the members of the Allied Printing Trades of Los Angeles; W. L. Glascock, representing the California Teachers' Association; Mark Keppel, Los Angeles County Superintendent of Schools; E. H. McMath, principal of the Santa Ana High School; W. H. Snyder, principal of the Hollywood High School, representing the State Council of Education; T. E. Hughes, representing the high school teachers of Los Angeles, and Charles T. Scott, representing the International Typographical Union. On the third day of this meeting, the members, on the invitation of the Los Angeles teachers, visited the Los Angeles High School, Lincoln High School, Hollywood High School, Los Angeles Polytechnic High School and Gardena High School.

The second public hearing, and the fourth meeting of the committee, was in the rooms of the State Harbor Commission in San Francisco on May 15 to 17, 1916.

At the invitation of local committees, your committee inspected, during this meeting, the following schools: Oakland Polytechnic High School, Oakland Vocational High School, Oakland High School, Fremont High School and the Evening Polytechnic High School in San Francisco.

At the hearing Mr. George Tracy again addressed the committee on points not fully covered by him in his previous address. His remarks on this occasion are substantially embodied in his paper printed herein as Exhibit "E."

At this meeting, Mr. Robert L. Telfer, Superintendent of State Printing, also presented a printed brief on behalf of the various interests supporting the proposal for free high school textbooks and in advocacy of the printing of such books by the state, which may be found in the appendix as Exhibit "F."

Among others who addressed the committee at this meeting was Mr. E. M. Cox, principal of the Fremont High School in Oakland. He was followed by Mr. L. B. Avery, who argued in favor of permissive textbooks, and by Mr. G. W. Wright of Modoc, who spoke against uniformity and against printing by the state. Mr. W. H. Tenney of Oakland also opposed the proposition. Mr. Heaton of San Francisco and Mr. Drackert of Typographical Union No. 46 of Sacramento, and others participated in an informal discussion. Mr. G. M. Fischer, principal of the Oakland Polytechnic High School, advocated furnishing textbooks free and adopting a standard of uniformity in the more general subjects. He declared that this would not be practicable for modern industrial subjects and proposed a conference of a committee of the legislature and the State Board of Education, at which a uniform list of textbooks could be prescribed. Others who addressed the committee on various phases of the subject were Mr. Thompson of Alameda, Mr. Sutton of Oakland, Mr. Lee of Oakland, Mr. Smith, representing Ginn & Company, publishers of school books, and Mr. Page of Berkeley.

Mr. Will C. Wood, Commissioner of Secondary Schools, asked and obtained leave of the committee to file a brief in reply to the brief submitted by Mr. Telfer. This reply brief is printed herein as Exhibit "G."

Thus your committee has afforded opportunity to all interested in the subjects within the scope of its examination to appear and be heard. Prior to each public hearing appropriate notice was given by mail to individuals who had expressed a desire to be heard, and through the press a general invitation to be present was issued to all those having information that would be of value to the committee. As appears from the above recital, many have availed themselves of the invitation. And in addition to the information furnished by those interested on one side or another in various phases of the subject, the committee has gathered from independent sources much interesting and valuable data. This data has been considered carefully by the members individually and when meeting together for the purpose.

The largest single item of expense in California is for education. It appears from the annual report of the Superintendent of Public Instruction that, for the fiscal year 1915-16, the entire expenditure of public funds devoted to that purpose exceeded $36,000,000, or more than $12 per capita. Of this enormous total, nearly $10,000,000 was expended for secondary schools. This report also shows that the value of high school property within the state is in excess of $26,500,000, while the outstanding bonded debt of high school districts is nearly $13,500,000. The total bonded debt of school districts in the state as shown by this report is about $42,000,000, an increase of nearly $6,000,000 over the preceding year.

These figures eloquently testify to the generous provision made from public funds for the support of education. In this connection, attention is directed to the opinion expressed to your committee by the Superintendent of Public Instruction that a substantial saving could be effected by a change of methods without at all impairing educational facilities. Various suggestions and recommendations for substantial saving in school expenditures may be found in this report.

Your committee reassembled in the rooms of the Legislative Counsel Bureau on October 11, 12 and 13, on December 7, 8 and 9, and again on December 18 and 19, 1916, examined the information before it and discussed at length the bearing of such information upon the points at issue. The result of these deliberations is herewith submitted.

I.

Authorship of Texts.

The members of your committee are agreed that it has not been demonstrated that, in the words of the first recital of Assembly Concurrent Resolution No. 26, 1915, "the purchase of textbook plates and the annual payment of royalties amounts to a sum greater than would necessarily be expended if this work was compiled by California authors."

In an effort to obtain light on this matter, the secretary was instructed to send to the State Superintendent of Public Instruction the following letter:

> "I have been instructed by the legislative committee appointed pursuant to Assembly Concurrent Resolution No. 26 to ask if you will kindly furnish information on the following points:
>
> 1. What elementary textbooks compiled or prepared by California authors under authority of the State Board of Education have been used in the schools of this state? In addition to naming the books and the authors, please give (*a*) the cost of each book, (*b*) the number of each used, (*c*) the period and length of time during which each was used, (*d*) the cost to the state of each compilation, specifying separately the copyright or royalty cost.
>
> 2. Please give a list of the books by California authors which have proven successful and state the period of their use in the schools.
>
> 3. Are any copyrights of school books now controlled by this state? If any, please give the name of the work and of the author thereof. (Please note that this query is not limited to California authors.)
>
> 4. Please give a list of the books and of the authors thereof now in use upon which the state is paying a royalty or the copyright to which the state has purchased or leased, and state the amount of the royalty or the cost of the copyright, as the case may be, in each instance.
>
> 5. Please give the particulars of each instance in which the state has sought to obtain control of textbook copyrights but has been deterred because of prohibitive cost or other reasons.
>
> Information on the above points at your earliest convenience will be greatly appreciated by the Legislative Committee."

To this Mr. Hyatt replied as follows:

"Answering your letter of December 14th, I assure you that I shall be very glad to cooperate with you and give you all the information that is within my power. I shall answer your questions seriatim, as follows:

1. I enclose herewith a brief history of the California textbook plan, which contains a good deal of the information requested in this paragraph. You will find the time divided into three periods, first, second and third. Up until 1903 all the books issued by the state were by California authors, as explained in the text of the circular. The circular also gives the cost of each book and the period during which it was used.

2. It would not be possible to pick out which of these books were successful and which were unsuccessful. That is purely a matter of personal opinion. In the minds of those who issued the books they were very successful. In the minds of all book publishers they were very unsuccessful. The rest of the world was divided in its opinion.

3. All the copyrights up to 1903 belonged to the state and are controlled by the state absolutely. There is one small exception to this, in that a small royalty was paid to the Houghton, Mifflin Company for a portion of the matter used in one of the readers. This was so small as to be negligible.

4. On page 11 of the circular above referred to you will find a list of the books in use at the present time with the royalty on each, the cost price, and the trade name of each book. Only two of these are by a California author, namely, the two arithmetics. All of the books are published on a royalty basis, and the state does not own the copyright to any of them.

5. I do not recall any specific instances of the state seeking to obtain control of textbook copyrights. In all adoptions the state has advertised for competitive bids for furnishing textbooks, and it has always found the royalty basis to be the most advantageous so far as could be ascertained. All proposals that they have made to publishers for the purchase of the copyright of a popular book have been met by refusals or the naming of impossible figures.

I enclose with the above our latest report showing some more textbook figures which may be of interest. When you have looked over all of these, if there still remain any doubtful points in your mind, or if you desire any further information, I shall be glad to serve you to the best of my ability.''

The history of the California textbook plan referred to in Mr. Hyatt's letter is reprinted herein as Exhibit ''H.''

This problem has been the subject of careful investigation elsewhere. In their report made after a thorough research, the Textbook Commission of the Province of Ontario used the following language which is peculiarly applicable to our situation:

> ''The department may select an author to prepare a textbook, then engage a publisher and fix the price at which the text shall be sold to the public. This is the method which, speaking generally, was adopted under the two previous Ministers of Education. The author selected was not necessarily the one who could produce the

> best text; the publisher had the price fixed for him and he immediately set to work to make the most money he could out of his contract. Consequently the present textbooks are unsatisfactory.
>
> A second method may be considered. The Department might have all its texts prepared under its authority, make its own plates, own all the rights in the texts and then have them printed by tender. If the Department represented the whole of Canada instead of one province this system might be expedient. For a single province to adopt such a plan would be expensive and cumbersome.''

Your committee is therefore of the opinion that the present policy of the state, in this regard, should be pursued. It is too late to nurse California authors at the expense of the educational system. While, other things being equal, California authors should have the preference, yet your committee believes it is the part of wisdom and in accord with the almost universal sentiment of the people that the best available book for our high school pupils should be procured without regard to its source.

II.

Printing in Sections.

The members of the committee are agreed that there is very little evidence in conformity with the second recital of the above-named resolution, to the effect that ''there is a sentiment among the school faculties and parents of school children, that the books should be issued in sections to cover a term instead of several years, and used by but one pupil.''

There have been some such statements made to the committee in a more or less cursory manner and it is reported that in one or two districts a movement of the sort is on foot. The principal argument in favor of furnishing texts to pupils in sections is that such a plan lessens the chance of transmitting disease. It may be observed, however, that all the danger of this kind that exists in connection with the use of school books is attendant in a much greater degree upon the use of library books. No positive evidence has been presented on the subject, and certainly it does not appear that there is any general public demand for the issuance of books in sections.

III.

Free Textbooks.

The members of the committee agree that, undoubtedly, the third recital of the resolution is in accordance with the fact and that the issuance of free textbooks to the students of the elementary schools of California has proven a very marked success.

A report presented to the legislature in 1915 by the New York state department of efficiency and economy estimates the cost of supplying free textbooks in both the elementary and secondary schools. New York City has furnished free books for many years. The experience of seventeen cities furnishing secondary school books is presented, and the conclusion is that the cost of the installation of a system of free textbooks in the high schools would average $4.8487 for each pupil "if purchased from private publishers at prices paid by the city of New York." This figure represents the cost of new books; in other words, the initial cost of the new system. "The cost of renewal, or the annual cost of a free textbook system for New York State, is estimated from the annual cost in free textbook cities of the state as follows: In elementary schools, $0.6456; in secondary schools, $1.5833."

Investigation discloses that—

(*a*) Textbooks are furnished free to pupils of the high schools in Delaware, Maine, Maryland, Massachusetts, Nebraska, Nevada, New Hampshire, New Jersey, Panama, Pennsylvania, Rhode Island, Vermont and Wyoming.

(*b*) They are furnished by the state in Maryland and Panama Canal Zone; by the town or city in Maine, Massachusetts, Rhode Island and Vermont; by the local school committee or board of education (except in the city of Wilmington) in Delaware; by the district in Nebraska, Nevada, New Hampshire, New Jersey, Pennsylvania and Wyoming.

In Nebraska, approximately $200,000 was spent for free high school books in 1914–15.

In New Jersey, where the enrollment is 38,099, for textbooks and supplies there was expended $111,421.11, or an average of $2.92 per pupil.

In Porto Rico, for an enrollment of 2,960, there was expended for textbooks $4,972.22, or an average of $1.68 per pupil.

In West Virginia, less than $5,000 (estimated) was spent for textbooks.

In Wyoming, the total enrollment in grades and high schools was 27,536; in high schools, 2,533. Expended for free books of all kinds, $33,000.

In Vermont the total enrollment in high schools was 5,975; expended for free textbooks in high and elementary schools, $50,016.61. Furnishing to high schools is permissive, but is almost universal.

In Maryland, where textbooks are purchased by the county school boards with state appropriation, and in Baltimore City, by the Board of Commissioners, textbooks are bought by competitive bidding. One hundred fifty thousand dollars is appropriated annually for this purpose. The enrollment in high schools last year was 5,550 and the cost of high school textbooks was not segregated.

(*c*) Textbooks are furnished free in some localities in Colorado, Connecticut, Florida (four counties), Iowa, Ohio and West Virginia.

In Arkansas, Connecticut, Florida, Illinois, Indiana, Kentucky, Louisiana, New Mexico, North Dakota, South Carolina, Tennessee, Virginia and perhaps some other states, books are furnished free to indigent pupils.

In Idaho, the State Board of Education has the power to determine whether textbooks shall be free.

(*d*) In states where it is optional with districts to furnish free textbooks, the following has been the result:

State	Districts using free books	Percentage of pupils
Colorado	20 per cent.	
Connecticut	133 out of 168 towns	85 per cent
Idaho	75 per cent	Over 75 per cent
Iowa	70 out of 5,000.	
Kansas	Very few.	
Michigan	1,177	Nearly 20 per cent
Minnesota	6,599 out of 9,763	90 per cent
Missouri	323	30 per cent
Montana	613 out of 1,369	57 per cent
New York		65 per cent
North Dakota	3,679 out of 6,614	50 per cent
Ohio	20 cities	16 per cent
South Dakota		5 per cent
Texas	Practice too recent for figures.	
Washington	1,437	70 per cent
West Virginia	50 out of 342	20 per cent
Wisconsin	37 cities out of 78; 2,836 others out of 7,000	66 per cent

California Illustrations.

Three high school districts in California, San Mateo, Conley and Clovis, have of their own volition provided free textbooks for their pupils. In these districts the plan has worked satisfactorily. The superintendent of San Mateo says:

> "The San Mateo High School in this county, which has an enrollment of 290 pupils, furnishes all of the books for the students. They commenced the system this year and pay for them from the district tax. Whereas the books cost the students nearly $2,000 they cost the trustees in the neighborhood of $1,000. The books are loaned to the students as library books and are charged to them. When returned in fairly good condition the charge tag will be destroyed. The pupils like the idea. The parents are glad to be relieved of the burden and the tax is less than one cent.

> "I think the law should be so amended as to force the district to furnish the books. The books to be purchased, however, should be on the approved list of the State Board of Education."

The following is the Clovis plan, as described by Mr. P. H. Benson, the district superintendent:

> "The Clovis Union High School buys all the books used in the school, puts them in the school library, and loans them to the students as they need them. A few of the interesting points in this regard follow:
>
> "1. The cost to the pupil: The pupil pays nothing for books, therefore no hardship is placed on poor pupils or parents. I believe books would cost pupils about $5 per year at least. For 150 pupils this is a total of $750 per year if all are *new*, for community.
>
> "2. Cost to community less: Last year when we had a large increase of 33 per cent and many new books, they cost us only about $300 for all. This, if it were divided, would be $1.50 per pupil, and if this book is used by four pupils, then the individual cost would be 62 cents per pupil. This does not include books on hand before, but each dollar spent will work out this way. Last year I bought English texts at $1.35. Already two classes have used this book and it is in fine shape. Probably more than two more will use the identical books. Therefore, if four pupils use one book the cost to each would be only 34 cents per pupil as against $1.35 for a new book. You see the saving. *Moreover, the community at large pays* for the books and thus *the man who is able to pay foots the bill* instead of the poorer man.
>
> "3. Convenience: The convenience of having the books at any minute one needs them for study, reference or reading, and of having every pupil equipped with a book on time is worth considerable.
>
> "There are only two valid objections in my mind at this time. First, the liability of spreading disease. Answer, fumigate books. Second, carelessness with books. I do not know whether they would take any better care of their own books or not, since father, not they, pays for them."

The supervising principal of Conley schools writes:

> "Replying to your favor of the twentieth instant in regard to Conley High School having furnished free textbooks to its students, will say that this was begun some four years ago, when the school was small and there were no dealers who made a specialty of handling such books here.
>
> "The plan worked so well for us that we have continued it to the present time. While we have no separate account of the exact cost of these textbooks, as we were paying for library and supplementary books at the same time we were furnishing texts, this fact is true: We dealt directly with the wholesale houses, thus getting dealers' rates; in addition to this, we have received

> liberal discounts for meeting our bills within thirty days, of which we have always taken advantage, thus bringing the cost to the lowest possible figure.
>
> "The books have received excellent care and we have had very few losses, all of which means a great saving to the community. Moreover, going into open market, we have bought the very best texts the market afforded in each subject, thus doing away with the necessity for a multitude of supplementary books.
>
> "Whether the state or the district furnishes the books, we favor the plan of free textbooks; but we believe these should be bought on contract from the publishers, since whenever a better textbook in any given subject is put upon the market, these could be contracted for when the old contract expires."

Committee Recommendations.

After an investigation of all the evidence before it, including the facts herein set out, and especially in view of the lack of any prescribed uniformity of textbooks, your committee feels that it is not expedient at this time that the state should furnish textbooks free to pupils of high schools.

It is the opinion of your committee that, after the substantial uniformity recommended herein shall have been accomplished, it may be feasible for the state to furnish textbooks free to the pupils of secondary schools. It is possible also that, when the time necessary for the preliminary steps has elapsed, the prices of ink, paper, etc., will have sunk once more to a normal plane. By that time more data, the product of experience in various districts, will be available to guide the authorities in the final determination of the question. In the meantime the system now in vogue in some school districts, under permission of law, of furnishing textbooks by the district, should be encouraged, and the legislature should enact whatever laws may prove to be necessary to enable districts more readily and conveniently to take such action in their discretion. On the petition of, say fifty heads of families in a district, filed ninety days before election, the proposition for free textbooks should be submitted to the voters of the district at the next succeeding election.

It will be seen from the data heretofore set out in this division that, in a number of states, books are so purchased and furnished by districts. In all of these states the law has thrown protective provisions around the whole system so that both quality and the lowest possible price are secured. A good example of such statutory provisions is the law enacted by the legislature of North Dakota in 1915. This statute is reprinted in the appendix as Exhibit "I."

In this connection the committee discussed various methods of purchasing textbooks. The members are agreed that probably the most satisfactory method would be a system by which the present State Purchasing Agent would purchase in quantities the books called for and establish depots in, say, three convenient centers of population from which such books could be distributed through county purchasing agents or other appropriate officials. This plan could be put into effect whether the books are paid for by the pupils themselves or are furnished free by some public agency. It is the opinion of the committee that general supplies for the use of the schools, as well as the books, should be purchased and distributed in this manner. For this purpose the legislature could appropriate a revolving fund. The supplies, as well as the textbooks, could be sold at a price representing the cost to the state plus a reasonable charge for administration, and the receipts would reimburse the revolving fund. No sufficient reason is perceived why the supplies for the elementary schools also could not be bought in this way.

The experience of other states which have purchased books by contract in substantially this way has been very satisfactory. The state, by purchasing in large quantities, could procure books at the lowest possible price, and the public could be protected by bonds furnished as in other states, in sufficient amount to insure the furnishing of books as good in quality as samples submitted and at the prices quoted. Other methods of distribution have been adopted in different states and are pointed out in an extract from the United States Bureau of Education Bulletin, 1915, No. 36. This may be found in the appendix as Exhibit "J." In view, however, of all the considerations that present themselves, and especially in view of the fact that this state already has a purchasing agent whose department is in successful operation, your committee is of the opinion that the plan outlined above would be the most satisfactory to everybody concerned. It is the opinion of your committee, and it has been stated to your committee by persons competent to judge, that such a system would probably save to the people of the state from 20 to 25 per cent of the present cost of the books. A saving equally great would undoubtedly be effected if the school supplies were handled in the same way.

IV.

Printing by the State.

Granting the success of the system of free textbooks in the elementary schools as declared in the recital of the resolution, it does not follow that it is economically advisable for the state to print textbooks for free distribution to pupils of high schools. The reasons why the same arguments do not apply to the two classes readily present themselves and are based chiefly on the limited number of the books that could be used in any one year in most of the subjects taught in the high schools. There are in California 266 high schools, in attendance at which in 1915–16 there were about 76,000 pupils (of whom about 15,000 were enrolled in night schools) taking instruction in a great variety of courses. (It is to be noted in passing that the high schools show a most notable increase in attendance this year, the enrollment being, in round numbers, 95,000, of whom about 27,000 are in night schools.) In the elementary schools of the state there are about 400,000 children. Books can not be profitably printed except in large quantities. The 400,000 students in the elementary grades in 1915–16 used 23 books, including five copy books, representing eight subjects besides writing. Most of these are of an inexpensive kind and offer themselves readily to cheap production. They can, moreover, be produced in large quantities. On the other hand, many of the books necessarily used in the high schools are large and, from the nature of the subject and character, expensive. As against the 23 books used by over 400,000 children in the elementary schools, there were upwards of 100 subjects taught in the high schools to less than 80,000 pupils. First Algebra, the only subject taught in every one of the 266 high schools in the state, was studied last year by only 17,208 pupils. Plane Geometry was taught last year in all the high schools but one, to 10,724 pupils. In the brief submitted on behalf of various interests, and which is printed herein as Exhibit "F," it is said that "textbooks can profitably be printed in the State Printing Office in editions of 10,000 and possibly less." In only five of the courses offered in the high schools last year were there more than 10,000 pupils enrolled. In 75 of the courses there were less than 5,000 enrolled. In 53 courses less than 2,000 were enrolled. There were 17 courses in no one of which was a subject taught to more than 100 pupils in the whole state.

The table printed in the appendix as Exhibit "K" shows the number of schools and pupils therein respectively, in which the subjects specified are taught.

Again, the cost of printing high school books would be increased by the fact that, owing to the different character of the subjects and the greater difficulty of finding satisfactory texts, the royalty on high school books would be greater than the royalty on elementary books. While the royalty on elementary books in California is about 15 per cent, experience has demonstrated that the royalty on books in the secondary schools would average in the neighborhood of 30 per cent.

The element, however, that most seriously complicates this problem is the matter of uniformity, or rather, lack of uniformity in the books in use in our high schools. In the figures given herein showing the number of pupils in certain named courses, we have assumed, to give for a moment the benefit of the argument to those advocating printing of these books by the state, that all the pupils in a specified course use the same book. This is far from being the case. By reference to the table printed below it will be seen that, in the 266 high schools of the state, the 17,208 pupils taking First Year Algebra use 12 different texts; that in the 198 schools in which Advanced Algebra is taught, the 2,738 pupils use 12 different texts; that in the 265 schools in which Plane Geometry is taught, 13 different texts are distributed among the 10,724 pupils studying the subject; that in the 245 schools where Ancient History is taught, 10 different texts are divided up among 8,886 pupils; that in the 256 schools teaching Civics, 5,250 pupils use 13 different texts; that in the 145 schools teaching German Grammar, 21 texts are distributed among 3,478 students; that in the 34 schools in which English Grammar is taught, 15 different textbooks are used by 4,111 pupils. And yet, even those who advocate state printing of textbooks admit that, unless the edition is at least 10,000, the printing would be done at a cost that would be prohibitive.

The table, referred to in the above paragraph, shows the number of different texts that are used in each of the more common subjects, and the total number of pupils studying that subject, and appears on page 30 in the next division of this report.

It is perfectly clear, therefore, that the printing of high school textbooks by the state is absolutely out of the question so long as the present methods of adoption exist. To make state printing at all practicable it would be necessary to prescribe that, in almost every subject taught in the high schools of the state, only one textbook could be used. Even though one textbook should be adopted for a four-year period, the subjects that would be open for state printing would be comparatively few, for it must be remembered that in many instances one book could be used by two or three students in successive years. Take, for example, the subject of Solid Geometry. This subject, it appears from the table above referred to, is studied by 1,545 pupils scattered over the state in 189 high schools. In four years, if there were no increase, this subject would be studied by 6,180 pupils. Allowing for a natural increase, say that 6,500 pupils would take Solid Geometry in a four-year period. Then, if not a single textbook in this subject were used by more than one pupil, that is to say, if every pupil had a perfectly new book, only 6,500 books would need to be printed in this subject in the whole period of four years. Under any circumstances, to make state printing profitable, one book must be used in several successive years. Applying the same methods of computation to the various subjects designated in the table above referred to, it will be seen that, even with absolute uniformity of textbooks, the subjects in which books could be profitably printed by the state are very few.

V.

State Uniformity of Textbooks.

This brings us naturally to a consideration of the advisability of adopting a uniform standard for the textbooks used in the high schools of the state. Should it be provided that the same book must be used in every school in which a course is given in the subject of which that book treats? Should this uniform standard be prescribed in every subject taught in the high schools, or should a greater latitude be allowed in some subjects?

The proposal for uniformity is the one that is fought most earnestly by the teachers of the state. The greater part of the briefs submitted on behalf of the high school teachers and teachers' associations is made up of arguments directed against the proposal for uniformity. And generally speaking, the adoption of a uniform text is most objectionable in those courses taken by a comparatively small number of pupils.

The provisions of the present law relating to the adoption and printing of books for use in the elementary schools are found in section 1519 of the Political Code. Recent amendments to our school laws, it may be said, have for the first time made the high schools really a part of the educational system of the state. The provisions governing the use and adoption of textbooks in the high schools are found in section 1750 of the Political Code. That section provides, among other things, that "the high school board of each district which has not already done so, shall adopt textbooks for use in such high school district, from a list prescribed by the state board of education, and the clerk or secretary of said board shall, annually, during the month of October, certify to the state board of education a list of all textbooks so adopted by said board during the previous year. The order of adoption shall be entered on the minutes of the board, and no textbook so adopted shall be changed for the term of four years after adoption; provided, that a high school board may continue the use of a textbook after the expiration of such term of four years until such time as it sees fit to change such textbook, or until such time as said textbook shall be stricken from the list of textbooks prescribed by the state board of education. This section shall not be construed to forbid the adoption of an additional textbook in any subject when the textbook in such subject has been completed."

It is clear that the powers conferred upon the State Board of Education in this respect have been ample enough to make it possible for that Board, by restrictive selection to remove much of the objection that can be justly made at this time to the adoption of textbooks used in the high schools. Your committee is of the opinion that the pupils of the state and their parents are saddled unnecessarily with a heavy burden of expense which even, in some cases, denies to children the chance to obtain the full benefits which the high schools are intended to bestow, by the failure of the properly constituted authorities to assume the responsibility of exercising the powers conferred upon them relating to the selection of books.

It should be remarked here that the table above referred to and other tables of similar nature printed herein have been made up from the lists certified to the State Board of Education in October, 1915. For many years the liberty of selection of high school textbooks was virtually unrestricted. The present State Board of Education, however, has been gradually restricting the list from which selections may be made and, since the members took office, has reduced the list of approved books from 1,196 to about 369. In April last your committee waited upon the State Board of Education in open meeting, explained the purposes of this investigation and requested from the state board a statement of its attitude on the subjects interesting the committee. The request was repeated from time to time and, during the progress of its last meeting, the committee received from the Superintendent of Public Instruction a copy of resolutions adopted by the State Board of Education at its December meeting, in the words following, to wit:

> "*First*—The State Board of Education is of the opinion that it would be inadvisable to prescribe a series of textbooks for uniform use in the high schools of California. The high school situation is changing so rapidly that rigid standardization of textbooks and courses of study may seriously hamper the development of high school education in the state.
>
> "*Second*—It is the opinion of this board that it would be unwise at this time to require the board to limit the number of textbooks from which local high school boards must make adoptions to two or three books in each subject. If the list is so limited the board would be compelled to make a very careful investigation of the merits of each textbook. In fact, the investigation would have to be almost as carefully made as the investigation now made by the board in adopting textbooks for elementary schools. This investigation would require practically all of the time of an additional commissioner, the services of many expert readers in the various subjects, and extra assistants to handle the reports and correspondence, and would not benefit financially or educationally, but would reduce to rigid limits the textbook lists regardless of their applicability to local needs or conditions. The cost of making such investigations would amount to possibly $25,000 each year and would not, in our judgment, result in a corresponding gain to the high schools of California. If the board were allowed latitude in the matter to the extent of five textbooks in each year course in a subject offered in the high school, the investigation need not go so much into detail nor be so exhaustive. That the state board would carefully administer the law in the interest of the pupils

> and parents is indicated by the policy it has adopted in reducing materially the list of textbooks prescribed for the high schools of the state.
>
> ''We earnestly recommend that sufficient latitude in the selection of textbooks be allowed in any law that may be suggested to the Legislature.''

The above resolution suggests its own commentary, and the limited space of this report will not be taken up in dwelling upon it. It is obvious that the members of the State Board of Education must have adopted this resolution so hurriedly that its outstanding inferences escaped their attention.

In the first paragraph of the resolution as set out above and in the first sentence of the second paragraph thereof, the State Board of Education expresses its opinion that it should not be required ''to limit the number of textbooks * * * to two or three books in each subject.'' The information contained in Exhibit ''M'' hereof and in the documents from which this information was collected and which have been for some time on file in the office of the State Board of Education, must have escaped the attention of the Board. Careful consideration of this information offers food for serious reflection and from it no conclusion can be drawn except the one directly opposed to that stated in the above resolution. The exhibit shows as clearly as could possibly be shown by a mathematical demonstration that the authorities of the 266 high schools in this state voluntarily, independently and without concerted action and, in most instances, by an overwhelming majority, have expressed themselves as being in favor of the adoption of one or two or, at most, three textbooks in the principal subjects taught in the high schools. The committee feels that the local boards and principals, for educational reasons, and acting without concert, have themselves demonstrated their preference for what is virtually a very complete system of uniformity. For confirmation of this, let us refer to a few of the figures of Exhibit ''M.'' Of the 17,208 pupils studying algebra in the high schools, 10,543 use one book, 2,836 use another book, and 2,192 use a third book. Of the 10,575 pupils studying geometry, 6,655 use one book and 1,039 use another book. Of the 8,507 studying American history, 5,928 have adopted one book. Of the 8,886 pupils studying ancient history, 4,276 use one book, 1,507 a second book and 1,466 a third book. Of the 2,254 studying English history, 1,995 use one book. Of the 5,464 studying English literature, one book has been adopted for 3,962. Of the 15,034 studying English poetry, the adoption of one book for 14,505 expresses an almost unanimous consensus of opinion. And so the figures run right down the list. What more convincing argument for the feasibility and desirability of some system approaching uniformity could be made than is thus offered by the action of the local high school authorities themselves? If further arguments and considerations were entirely lacking, these figures alone would compel the committee to adopt the conclusion which is presented herein.

The state board further says that, if the list is limited, ''the board would be compelled to make a very careful investigation of the merits of each textbook; in fact, the investigation would have to be almost as carefully made as the investigation now made by the board in adopting textbooks for elementary schools.'' Does the board wish it to be understood that the books now in the approved list have been selected by it without ''a very careful investigation?'' If so, this is astonishing and unexpected information. This committee is unable to perceive why the importance of the studies in the high schools does not demand as careful an investigation of the books used in these schools as is made in the adoption of textbooks for elementary schools.

A clear, general statement of the cause and effect of legislation providing for state uniformity is found in the United States Department of Education Bulletin heretofore quoted.

> ''Laws for state uniformity have been enacted for many reasons. Probably the reason which has carried the greatest weight in causing the passage of legislation has been the question of cost. State adoption of uniform books has been taken as a means of regulating prices to prevent sales at exorbitant prices or at prices greater than the same books are sold in other places. In this the plan on the whole has been successful. State adoptions are made under regulations requiring contract prices with deposits of bonds to be forfeited in case of any violations of the terms of the contracts. It is undoubtedly true that lower prices prevailed after state uniformity had been established and adoptions made. Textbook publishers could afford to make lower prices when all the schools in the state were required to use their books, as the cost of selling was then made comparatively small. The high prices formerly paid were often the work of the local dealers rather than of the publishers. The legislation providing state adoptions has in all cases set the price to be paid by the users and has therefore prevented local dealers from overcharging.''

The state of Kansas has recently given this whole question a very thorough examination and has provided that the State Schoolbook Commission shall, when practicable, print, publish, or provide for the publication of a complete series of school textbooks named in the statute for use in the public schools, including the high schools. The full text of the relevant provisions of this statute is given in the appendix as Exhibit ''L.''

The Kansas Schoolbook Commission, says W. D. Ross, State Superintendent of Public Instruction, ''has just completed the adoption or approval of a complete list of high school texts for the five-year period beginning May 1, 1915. The prices at which these books are to be furnished to dealers by the various publishers are uniformly 75 per cent of the publishers' list price f.o.b. Chicago, with the privilege on the part of the state of immediate publication of the Geometry from plates furnished by its publisher at a royalty of 28 per cent on the list price, and a similar privilege as to the Composition and Rhetoric, Physics, and Latin Prose Composition at the end of three years." (See U. S. Bureau of Education Bulletin, 1915, No. 36.)

The enrollment in the high schools of Kansas in the year 1914 was 42,831. Mr. Ross has kindly furnished us with a list of the books adopted by the Schoolbook Commission and the contract price arranged for, which is illuminating and which is here reproduced.

UNIFORM TEXT AND PRICE, HIGH SCHOOLS OF KANSAS.

Name of book	Author	Contract price, per book
Elements of Composition	Canby & Opdycke	$0.77
English Literature	Halleck	1.04
American Literature	Halleck	1.00
Story of Ancient Nations	Westerman	1.14
Outlines of European History	Robinson & Breasted	1.20
New Medieval and Modern History		1.20
Outlines of European History, Part 2	Robinson & Beard	1.20
American History	James & Sanford	1.08½
History of England	Larned	.90
Government and Politics	Gitteau	.80
Shorter French Course	Fraser & Squair	.88
Elementarbuch der Deutscher Sprache	Spankvofd	.80
Latin Lessons	Smith	.80
Cæsar's Gallic War	Walker	.75
Cicero	D'Ooge	.75
Virgil's Æneid	Harper & Miller	.75
Elementary Algebra	March	.50
Plane and Solid Geometry	Ford & Ammerman	.70
Practical Physics	Black & Davis	.95
Elementary Chemistry	Smith	.95

Giving his opinion on uniformity of high school textbooks, Mr. Ross says: "Secures greater cooperation in regard to course of study. A great help to pupils changing districts. Reduces cost to pupils."

The experience of Indiana is also very instructive. In that state, we are informed by Charles A. Greathouse, Superintendent of Public Instruction, there is uniformity in the following branches: Algebra; Geometry; Commercial Arithmetic; History—United States, Ancient, Medieval and Modern; Civil Government; Physical Geography; Commercial Geography; History of English Literature; History of American Literature; English Composition and Rhetoric; Latin—Beginning Latin, Latin Grammar, Prose Composition, Cæsar, Cicero, Virgil;

German Conversational Method Grammar and Grammatical Method Grammar; four elective textbooks in each of the following subjects: Botany; Zoology; Physics; Chemistry. The law prescribing uniformity for high schools in Indiana, we are informed by the State Superintendent, was passed in 1913 as a result of the favorable experience of the uniform textbook law for furnishing books to pupils in the elementary schools.

The following table shows the adopted textbooks for Indiana high schools, together with the contract price and the exchange price:

UNIFORM TEXT AND PRICE, HIGH SCHOOLS OF INDIANA.

Books	Contract price	Exchange price
New High School Algebra (Wells & Hart)	$1.08	$0.72
Plane and Solid Geometry (Wentworth & Smith)	1.17	.78
Ancient History (Webster)	1.35	.90
New Medieval and Modern History (Harding)	1.35	.90
American History (James & Sanford)	1.25	.70
Government in the United States (Garner)	.90	.60
Composition and Rhetoric (Thomas, Howe & O'Hair)	.90	.45
First View of English Literature and First View of American Literature (Moody, Lovett & Boynton)	.90	.60
Latin for Beginners (D'Ooge)	.90	.60
Cæsar, 4-book edition (Walker)	.90	.45
Cæsar, 7-book edition (Walker)	1.13	.75
Cicero, 6 orations (Johnston & Kingery)	.90	.45
Cicero, 10 orations (Johnston & Kingery)	1.13	.75
Virgil (Knapp)	1.26	.84
Latin Grammar (Bennett)	.72	.40
New Latin Composition, Complete (Bennett)	.90	.60
Essentials in German (Voss)	.80	.54
Beginners' German (Walter & Krause)	.90	.60
High School Geography Complete (Dryer)	1.17	.78
Commercial Geography (Adama)	1.07	.53
Modern Commercial Arithmetic	.75	.42
Practical Botany (Bergen & Caldwell)	1.22	.78
Text Book of Botany (Coulter)	1.03	.51
Plant Life and Plant Uses (Coulter)	1.08	.72
Practical Course in Botany (Andrews)	1.12	.75
Practical Course in Botany with Flora (Andrews)	1.35	.90
General Zoology (Linville & Kelly)	1.41	.90
Elements of Zoology (Davenport)	.97	.66
Descriptive and Practical Zoology (Colton)	1.35	.90
Animal Studies (Jordan-Kellogg & Heath)	1.03	.51
High School Course in Physics (Gorton)	1.03	.51
Physics (Black & Davis)	1.10	.75
Elements of Physics (Hoadley)	1.08	.72
A First Course in Physics, Revised (Milliken & Gale)	1.18	.75
Inductive Chemistry (Bradbury)	1.03	.51
First Principles of Chemistry (Brownlee)	1.13	.75
An Elementary Study of Chemistry (McPherson & Henderson)	1.18	.75
Chemistry (Hessler & Smith)	1.13	.75

The Department of Education of Porto Rico informs us that textbooks are adopted by the Commissioner of Education and that the following books, purchased at the prices named, are used in the subjects set out:

UNIFORM TEXT AND PRICE, HIGH SCHOOLS OF PORTO RICO.

Name of book	Author	Contract price, per book
Composition and Rhetoric	Lockwood & Emerson	$0.80
Two Year Course in English Composition	Hanson	.67½
American History	McLaughlin	1.23
English History	Montgomery	.93
General History	Myers	1.12½
Civics (Louisiana Edition)	Boynton	.75
French Grammar	Fraser & Squair	.95
Beginners' Latin	Smiley & Storke	.83
Cæsar	Harper-Tolman	1.04
Cicero	Harper-Gallup	1.12
Virgil	Harper-Miller	1.04
Elementary Algebra	Hawkes-Luby-Touton	.80
Plane and Solid Geometry	Wentworth	.62
First Course in Physics	Milliken & Gale	.93¾
First Principles of Chemistry	Brownley and others	1.00

The Department of Education of the Province of Ontario has furnished us with a copy of the textbook regulations, from which we learn that the following textbooks, sold at the prices named, have been authorized:

UNIFORM TEXT AND PRICE, HIGH SCHOOLS OF ONTARIO.

SCHEDULE "C."

Name	Price
High School Reader	$0.40
English Grammar (High School)	.45
English Composition (High School)	.18
Physical Geography (High School)	.60
Ancient History (High School)	.75
History of England (High School)	.65
History of Canada (High School)	.19
Arithmetic (High School)	.40
Algebra (High School)	.42
Geometry (High School)	.40
Latin Book	.60
First Greek Book	1.25
French Grammar (High School)	.60
French Reader (High School)	.11
German Grammar (High School)	.70
German Reader (High School)	.13
Physics (High School)	.90
Laboratory Manual in Physics (High School)	.35
Chemistry (High School)	.45
Laboratory Manual in Chemistry (High School)	.25
Bookkeeping—First Course	.30
Bookkeeping—Second Course	1.00

Attention is called in this connection to the following regulation prescribed by the Ontario Department of Education:

"The publishers shall sell direct, in any quantity, to any purchaser for use in Ontario, the books listed in Schedules * * C and * below, at 20 per cent less than the maximum prices named in the aforesaid schedules."

We have received expressions from the Superintendents of Instruction of some of the states, which we here reproduce.

In Alabama, Alaska, Florida, Georgia, Hawaii, Indiana, Kansas, Porto Rico, South Carolina, Texas and West Virginia, the conclusion is in favor of uniformity. The State Superintendent in Alabama says that it would promote "economy, a uniformly high standard and an easier transference of pupils." The Superintendent in Florida says: "It is too important a matter to be left to the idiosyncrasies of individual high school principals." The Kansas official says that the adoption of uniform books "secures greater cooperation in regard to the course of study. A great help to pupils changing districts. Reduces cost to pupils." The South Carolina official says: "Cheaper to patrons and pupils. Beneficial to class-room instructors and school organizations. Prevents exploitation by commercial educators. Helps to establish and maintain desirable standards." The Texas official says: "It saves money to the purchaser and makes it possible for the children of poor parents to procure second-hand books. Uniform adoptions insure a standard textbook for each child."

On the other hand, the Illinois Superintendent seems not to favor uniformity, basing his opinion on the general belief that "state uniformity is likely to work hardship and to interfere with successful results," though he says that "it is possible that an open list of approved books might be adopted with fairly good results."

The Massachusetts official says that, in that state, the want of uniformity often results in the selection of books that are not the best, "owing to the insufficiency of expert advice and of experience." He confesses to not having reached a decision as to which method is preferable.

In Michigan, Montana, Nevada and Texas, it is said that conditions in different parts of the states are so varied that uniformity is not desirable—just why is not pointed out. As Nevada is now a free textbook state, it is expected that uniformity will come. In South Dakota, on the other hand, the Superintendent does not favor state uniformity, while they have free textbooks.

The New Hampshire official says that the disadvantage of uniformity is "the wild scramble of book-makers for state adoptions, with all the trimmings that go with such contests."

In New Jersey, it is said that state uniformity "reduces each district to a dead level" and that "persons who teach should have some chance to express a preference for a particular text. Destroys local initiative." We learn that, in New York, "opinions differ."

From an examination of the statutes of the states, from various reports and from correspondence, it appears that there is state uniformity of high school textbooks—

(*a*) In all the subjects taught in Kansas, Oklahoma, Panama Canal Zone, Porto Rico, Utah (with few exceptions in industrial subjects), and Tennessee.

(*b*) In all the subjects in the regular course of study in the high schools in Alabama.

(*c*) In Algebra, Geometry, History and Civics in Delaware, Indiana, Oregon, Texas and West Virginia.

(*d*) In Botany in Delaware, Oregon and West Virginia.

(*e*) In German in Delaware, Indiana and Oregon.

(*f*) In Latin in Delaware, Indiana, Oregon and West Virginia.

(*g*) In Physics in Delaware, Oregon, Texas and West Virginia.

(*h*) In Zoology and Rhetoric in Delaware and West Virginia.

(*i*) In English in Oregon and Texas.

(*j*) In Bookkeeping, Arithmetic and Chemistry in Delaware and Oregon.

(*k*) In Biology in Oregon and West Virginia.

(*l*) In Geography in Delaware, Indiana, Oregon (Physical) and West Virginia (Physical).

In addition, there is uniformity in the subjects named below according to states:

Indiana—Commercial Arithmetic, History of English Literature, History of American Literature, English Composition and Rhetoric, German Grammar; four elective textbooks each in Botany, Zoology, Physics and Chemistry.

Delaware—French, English Grammar, Physics, Drawing, English.

Oregon—Agriculture and Physiology.

West Virginia—Art, Home Economics, English Literature and American Literature.

In West Virginia, however, the uniform law does not apply to municipalities having a population over 3,500.

The body vested with authority to adopt uniform books is a state body in—

Alabama (State High School Commission).
Delaware (State Board of Education).
Florida (State Book Commission on recommendation of subcommittee of nine educators).
Hawaii (Department of Public Instruction).

Indiana (State Board meeting as School Book Commissioners).
Kansas (State Textbook Commission).
Louisiana (State Board of Education).
Nebraska (State Board of Education).
Nevada (State Textbook Commission).
North Carolina (Textbook Commission).
Oklahoma (State Board of Education).
Oregon (Textbook Commission).
Porto Rico (Commissioner of Education).
South Dakota (Textbook Commission).
Tennessee (Textbook Commission).
Texas (Board appointed by Governor).
Utah (Textbook Commission).
West Virginia (Textbook Commission).

The course pursued in adopting books by the constituted authority in the various states may be judged from the following statement of the number of books adopted in the states named.

Alabama—

English Grammar	1	Sanford & Brown	$0.63
Composition and Rhetoric	1	Clippinger	.85
History of American Literature	1	Halleck	1.13
Algebra	1	Marsch	.55
Geometry	1	Wells	1.15
History Outlines	1	Renouf	1.20
Short History of England	1	Coman & Kendall	.90
American History	1	James & Sanford	1.33
Civics	1	James & Sanford	.84
Chemistry	1	Newell	1.12

It is to be noted that there are optional courses for larger schools.

Delaware—

In the subjects of Algebra, Arithmetic, Bookkeeping, Botany, Chemistry, Civics, French, Geometry, German, Geography, Physiology, History, Latin, Literature, Physics, Rhetoric, Zoology, Drawing and Music—18 in all—70 texts have been adopted altogether, including those for the different branches of the various subjects, as for example, English and American History, but exclusive of such texts as Cicero's Orations.

West Virginia—

History, Ancient	1	Morey's Outlines	$1.33
History, Mediæval and Modern	1	Myers	1.41
History, English	1	Walker's Essentials	1.33
History, American	1	Ashley	1.26
Civics	1	Forman	.83
Physics	1	Mann & Twiss	1.08
Zoology	1	Davenport's Elements	1.12
Biology	1	Hunter's Essentials	1.11
Algebra	1	Young & Jackson	1.00
Geometry	1	Wells—Plane and Solid	1.25
		Plane	.75
		Solid	.75

Tennessee—

Forty-seven books adopted for the entire course.

Algebra	1	Stone & Miller	$0.55
Geometry, Plane	1	Wentworth	.71
Geometry, Solid	1	Wentworth	.71
Geometry, Combined	1	Wentworth	1.18
Physics	1	Headley	1.13
Chemistry	1	Hessller & Smith	1.25
History, Ancient	1	Botsford	1.35
History, Mediæval and Modern	1	Myers	1.41
History, General	1	Myers	1.41
History, English	1	Niver	.81
History, American	1	James & Sanford	1.31

Attention is called to the report relative to the adoption of textbooks in Tennessee, from which the following is quoted:

"The commission adopted the policy of having the publishers present their books through the expert agents regularly representing them, rather than through lawyers and lobbyists employed on account of some supposed influence with members of the commission. We earnestly endeavored to effect an adoption free from improper influence and based alone upon the merits and prices of the books.

"There is no question but that we have saved the people of the state more than $100,000 on the elementary books alone, as compared with the last adoption, and a very considerable sum on the high school books.

"This reduction in the cost of the books has not been accomplished at the expense of merit in the books. We feel assured that the public will soon become convinced that we have secured better as well as cheaper books.

"Even in the instances where books were readopted, the commission, as a rule, succeeded in getting a lower price. For example, the History of Tennessee was cut from 75¢ to 60¢."

In the New England states the town or the city is the unit, and pretty generally throughout the country local boards adopt books.

The county is the unit in Maryland, Missouri (where there is no town of 1,000 population), and Washington.

The condition existing in California in 1915–16 is shown in the next table, which gives a list of the principal subjects taught in our high schools, the number of schools in which each subject is taught, the number of pupils studying each subject and the number of textbooks in each subject that were in actual use last year in this state.

TABLE SHOWING NUMBER OF SCHOOLS, NUMBER OF PUPILS AND NUMBER OF TEXTS IN EACH SUBJECT, HIGH SCHOOLS OF CALIFORNIA, 1915–1916.

Subject	Number of high schools	Number of pupils	Number of texts
Algebra	266	17,208	12
Algebra, Advanced	198	2,738	12
Higher Arithmetic	5	104	5
Mechanics	9	186	8
Geometry, Plane	265	10,724	13
Geometry, Solid	189	1,545	12
Trigonometry	170	1,032	14
History, Ancient	245	8,886	10
History, Mediæval and Modern	242	6,339	5
History, English	135	2,382	4
History, American	256	8,432	8
History, General	8	307	3
History, Industrial	19	420	7
Civics	256	5,250	13
Economics	68	1,579	8
Music	103	4,915	34
Physics	225	4,178	8
Chemistry	235	6,814	11
Physical Geography	87	2,022	7
Biology	51	1,390	5
Botany	68	1,712	9
Zoology	13	385	5
Physiology	34	1,232	11
Geology	7	126	7
Domestic Science	115	2,952	24
Agriculture	70	1,289	28
Manual Training	36	1,023	19
Science, General	117	3,501	7
Mechanical Drawing	38	565	14
History of Art	9	480	5
Greek Composition	5	62	3
Greek Iliad	5	22	3
Greek Anabasis	7	52	3
Greek Beginner's	9	63	4
Greek Grammar	8	76	1
Latin, First Book	250	8,493	10
Latin Grammar	164	4,776	7
Latin Cæsar	242	5,016	14
Latin, Beginner's Composition	162	3,647	13
Latin, Cicero	140	1,081	11
Latin, Virgil	127	713	9
German Grammar	145	3,478	21
German Composition	91	1,282	12
French Composition	33	891	10
French, Beginner's	60	1,516	15
French, Grammar	65	2,223	6
Spanish, Grammar	144	6,187	11
Spanish Composition	89	2,626	5
English Grammar	34	4,111	15
English Literature	187	5,465	13
American Literature	69	1,530	11

In the appendix is printed as Exhibit "M" a table which has been prepared at the request of this committee from authentic data in the office of Mr. Will C. Wood, Commissioner of Secondary Schools, and which shows the number of pupils using each of the several textbooks in a number of the most common subjects.

Nothing could show more clearly than do the above tables the unfortunate results of the methods of selection and adoption of high school textbooks which, in the past, have prevailed in California. Mr. Hyatt, Superintendent of Public Instruction, in his statement before your committee, declared that it would be advisable and on the whole very satisfactory to reduce the list of textbooks which high schools might use, three allowable books in each subject being ample in his opinion. Your committee is agreed, then, after a careful consideration of all the facts that have been gathered by it and of all the arguments that have been presented to it, that the best interest of the state requires that the axe be laid to the roots of the tree, and that at the earliest possible moment, in order to leave no room for misconception or confusion, the proper authority should cut out from the list of permissible high school texts everything that can be regarded as superfluous. Too tight a rein, perhaps, ought not to be drawn on certain subjects which are in the course of constant development, as, for example, certain branches of science. Moreover, in subjects like music and drawing, it is not so important that the list should be drawn down to the narrowest limit. Even as to these subjects, however, it must be remembered that it is the work of beginners that is chiefly concerned. While accuracy of information is always to be desired, yet the earlier work in these subjects does not demand the latitude that is required when the student reaches the wide field of university and postgraduate study. We believe, however, that much may be done to remedy present conditions by the efficient exercise by the State Board of Education of the wide powers in this regard conferred upon it by recent statutes, especially, if at the same time action be taken in conformity with another recommendation herein.

The conclusions of the Ontario Textbook Commission of 1907, heretofore referred to, are interesting and valuable in this connection and so far as they are relevant, are reprinted in the appendix as Exhibit "N."

Your committee is agreed that no reason is conceivable why the permissible list of books used in the high schools in this state should not be limited to a number not exceeding the number appearing on the next page after the subject named.

HIGH SCHOOL SUBJECTS AND RECOMMENDED MAXIMUM NUMBER OF TEXTS, CALIFORNIA HIGH SCHOOLS.

Subject	Number of texts from which adoption may be made
Algebra I	3
Algebra, Advanced	3
Geometry, Plane	3
Geometry, Solid	3
Trigonometry	3
Higher Arithmetic	3
History	3 for each year of the course prescribed in American and European history.
History, Industrial	3
Civics	4
Economics	4
Physics	3
Chemistry	3
Chemistry, Agricultural	3
Chemistry, Household	3
Physical Geography	3
Commercial Geography	3
Biology	3
Botany	4
Sociology	4
Physiology	3
Geology	3
Latin	2 for each year.
French German Spanish	5 books for each of these, exclusive of classics.
English Grammar	3
English Literature, History of	3
American Literature, History of	3
English and American Poetry, Collections of	4
English and American Prose, Collections of	4
Music	Such books as State Board shall see fit to adopt.
Agriculture	Such books as State Board shall see fit to adopt.
Mechanical Drawing	3
General Science	3
Manual Training	4
Household Arts	5
Zoology	4
Spelling	4
Shorthand	5
Typewriting	2
Commercial Law	2
Correspondence	2
Accounting	2
Bookkeeping	2
Business Practice	2
Salesmanship	2
Advertising	2

If any new subject shall be introduced into the curriculum, not more than three texts in each subject shall be permitted. As to books, however, that have been already adopted, schools shall be allowed to carry out their contracts for the full term for which the adoption was made.

The above provisions are thought to be liberal and probably a reduction in the permissible number of books even under this list might be made profitably in many of the subjects named.

Each publisher, when submitting to the State Board of Education a book which he proposes for adoption, should be required to accompany it with a listing fee of $10.00. The State Board of Education should publish each year a list of the books approved by it for the following year, accompanied by a statement of the price for which the publishers agree to furnish each book approved.

Your committee respectfully recommends that the legislature, by some appropriate action, call to the attention of the State Board of Education the conclusions embodied herein.

EXHIBITS.

Exhibit A.

[LETTER TO OTHER STATES.]

STATE OF CALIFORNIA.

Legislative Counsel Bureau.

SACRAMENTO, July 28, 1915.

DEAR SIR: A committee of the legislature of this state is gathering information relative to the furnishing of textbooks free to pupils in high schools.

You will put us under great obligation if you will kindly fill out as far as you can, the inclosed questionnaire and return at your earliest convenience to the undersigned.

We shall be glad to reciprocate at any time in any way within our power.

Very truly yours,

Chief of Bureau.

Exhibit B.

[QUESTIONNAIRE.]

State of

Information submitted by

CONCERNING HIGH SCHOOL TEXTBOOKS.

1. Is there state uniformity of high school textbooks?
2. If so, in which branches?
3. If textbooks are not uniform throughout the state, what is the political unit for the adoption of textbooks?
4. Are textbooks furnished free to students?
5. If so, are they furnished at the expense of the state, county or district?
6. By whom are textbooks adopted?
7. If figures are available, what was the total amount expended in the state last year for free textbooks in high schools?
8. What was the total enrollment in the high schools for the same year?
9. If there is state uniformity, please give data as follows:

	Name of book	Author	Contract price (per book)
First Year English Book			
Second Year English Book			
Third Year English Book			
Fourth Year English Book			
Ancient History			
Medieval and Modern History			
American History			
English History			
Civics			
First Year French Book			
First Year German Book			
First Year Latin Book			
Cæsar			
Cicero			
Virgil			
Elementary Algebra			
Plane and Solid Geometry			
Physics			
Chemistry			

10. Are present methods of adoption satisfactory?------------------

11. Any suggestions with reference to state uniformity of high school textbooks? (Give your opinion of advantages and disadvantages)

Exhibit C.

[ADDRESS OF MR. WILL C. WOOD.]

To the Honorable The Special Committee of Senate and Assembly, Appointed to Investigate Free Textbooks for High Schools.

GENTLEMEN: I submit for your consideration certain facts concerning the high school textbook situation in California, together with an analysis of these facts and a brief statement of the educational interests involved in the problem you have under investigation.

Significance of the problem.

I hope, gentlemen, that you realize the full significance of this investigation and the far-reaching effect of one possible conclusion which you may reach before you have completed your work. The problem you are considering is much larger than the mere problem of furnishing textbooks free to the pupils enrolled in the high schools of California. It is larger than the question of state uniformity of textbooks; larger than the problem of state publication. This is not a problem of economics alone. It can not be solved by considering only the dollars and cents involved. Overshadowing the economic factor is the educational phase of the question which forces itself upon us at every stage.

Burden of proof on the proponents.

I hope, gentlemen, that my association with you in the last session of the legislature has served to convince you that I am not a mere theorist in educational matters. If I did not deem this question large in its significance and vital to the high school system which I am charged by law to supervise, I would not urge the facts nor make the arguments which I shall submit today. I realize that my judgment is not infallible. It may be that I have been blind to certain phases of the situation. I do not hesitate, however, to submit the reasons for my judgment, and a full statement of the facts as I see them to your candid consideration. If the facts can be refuted; if the arguments can be answered; if the proponents of state uniformity and state publication of high school textbooks can make a good case, I shall not stand obstinately by my present judgment. However, the burden of proof is on them. They must establish two things before your committee can recommend the adoption of the proposed plan. First, they must show that the adoption of the plan will not react to the disadvantage of the high school system; second, that the plan is both economical and feasible.

Educational question of first importance.

I have placed the educational question first, because it is the more important. In considering educational questions, the people of California are not accustomed to regard dollars and cents as the prime consideration. The people of this state are ambitious in educational matters to provide the best for their children, not the cheapest. The great question involved is "Can the people of the state of California adopt the plan proposed without affecting materially the efficiency and progressive development of the great high school system of this state?"

Shall high school textbooks be free?

The people of California are committed definitely, in both the constitution and the statutes, to the democratic policy of giving every child residing in the state, who has ambition coupled with capability, the broadest and fullest educational opportunity that the state can afford, and this at public expense. The state is quite as solicitous for the educational welfare of its humblest child as it is for that of the child of its wealthiest citizen. It is to realize this great purpose that it has established its system of public schools ranging from the kindergarten to the state university.

I agree most heartily with the proponents of this plan, that education should be absolutely free. I agree with them that every child is the ward of the state, and the state can afford to supply not only tuition and comfortable school facilities, but also textbooks, free of cost to its half million school children. Recently the people of the state voted very wisely to furnish textbooks free to pupils of the elementary schools. The next step, logically, is to furnish textbooks free to the pupils of the high schools. The high school is a part of the public school system; it is within easy access for 95 per cent of the young people of California. It is the people's institution quite as truly as the elementary school is the people's institution. We may confidently look forward to the day when practically all the young people will be enrolled in the high school who ought to be there. The high school is growing by leaps and bounds. Statistics compiled in our office show that the enrollment in our high schools increased 32 per cent during the last two years, while that of the elementary schools increased only 10 per cent. The high school is becoming an institution for the children of the poor as well as the children of the people of means. The time has come when high school education should be made absolutely free. I hope, therefore, that your honorable committee will recommend to the legislature a measure providing free textbooks for the high schools of this state.

How shall free textbooks be furnished?

The question arises, how shall these textbooks be furnished? I should estimate that the average amount expended by each pupil for high school textbooks each year is approximately $6.00. We have enrolled in the high schools of the state approximately 76,000 young people. The total amount paid annually by the pupils of California for high school textbooks is approximately $456,000. Assuming that the state can furnish these books at a net saving of 30 per cent, the burden assumed by the state would be approximately $320,000 for the first year and at least $120,000 for each succeeding year, except years when textbooks are changed.

I am inclined to question, gentlemen, the advisability of the state assuming this burden. If the school district pays for its own textbooks, there will be greater economy in their use. If free textbooks are provided for high schools, I believe that the cost thereof should be borne by the districts rather than the state as a whole. I might mention that some high school districts have already adopted this plan. San Mateo and Clovis are now providing free textbooks for high school pupils and the aggregate saving is considerable.

Shall a uniform series be adopted?

The question of state uniformity of high school textbooks should be considered as distinct from the question of free textbooks. Acceptance of the principle of free textbooks does not carry with it acceptance of the principle of state uniformity. I wish to emphasize the fact that the problem of high school textbooks is not analogous to the problem of elementary school books. The elementary school is an old institution and its course of study and organization are standardized. The course of study for elementary schools in New York State differs very little from the course of study in our own state. A sixth grade class in arithmetic, whether in California or Virginia, studies fractions; a third grade studies addition and subtraction. We have had three centuries of experience in making a course of study for the elementary schools, so the course is standardized and fixed to a remarkable degree. Since there is uniformity in grading and in courses of study in the elementary schools throughout the state, it is comparatively easy to adopt a uniform series of textbooks for the elementary schools. The adoption of such a series in the grades does not force a radical reorganization of elementary school work.

High school book problem differs from elementary school book problem.

When we consider the public high school we face a situation utterly different. The high school is a new institution, comparatively speaking.

There were only forty public high schools in the United States in 1860. In 1900 there were 6,000 and in 1915, there were 15,000. In 1900 there were only 500,000 pupils enrolled in the high schools of the United States. In 1915, there were 1,500,000. The growth of the high school since 1900 has been remarkable. Before that date, the high school was dominated very largely by the university; it was an institution whose prime purpose was the preparation of pupils for college. In the last fifteen years, the high school, in response to a popular demand, has broken the shackles which bound it to the college. The real life of the American high school began only a decade or so ago. The high school is now changing with remarkable rapidity to meet the demands of the people. The old courses of study are being modified; new courses, especially vocational courses, are being introduced. So great is the growth, so rapid are the changes, that it is absolutely impossible at this time to give an adequate definition of a high school. The high school of today would bulge the definition of a high school five years ago until it burst. I have had opportunity to visit more high schools in California than any other state official. I wish to say, gentlemen, that there is the widest divergence among the high schools of California. Take the city of Los Angeles, in which this meeting is held. If I could take your honorable committee to visit the high schools of this city for even one day, I could convince you that the high schools are so different that they can not be closely standardized without working a revolution in high school work. I can show you such excellent work in classroom and shop and laboratory and field—work so admirably linked up with life, so vital and inspiring—that this committee would realize how harmful it would be to impose rigid uniformity upon the high schools of California. It is true that this city has a certain degree of uniformity in its textbooks, but this uniformity is so flexible that the growth and efficiency of the schools is not checked thereby. I want to say, gentlemen, that this vital, energizing high school work is possible only because we have construed the present textbook law liberally. Take the subject of mathematics, for example. All the high schools of the city offer the traditional course in algebra, plane geometry, advanced algebra, solid geometry and plane trigonometry. The great polytechnic and manual arts high schools wanted to offer a course in shop mathematics for the boys. I was asked if a textbook in shop mathematics could be adopted. I found that the entire course in mathematics was provided for; that a full series of textbooks in mathematics had been adopted. Could I permit the adoption of an additional textbook for those boys in the shops? I turned to the god of uniformity, and he shook his head. I turned to the god of common sense and he nodded. Censure me if you will, gentlemen, but I obeyed the god of common sense. The future of twenty boys outweighs a thousand times all the arguments for uniformity that man can offer. Again, I was confronted with the following situation: A school had adopted a complete system of textbooks in bookkeeping and accounting. A class of girls wanted to study household accounting. The question arose whether a system of bookkeeping adapted to a wholesale house should be applied to the household. Could a system of accounts dealing with pig-iron and steel rails in ten thousand dollar lots, be made to serve the purposes of young women who in later life would buy beefsteak in twenty-five cent cuts, or new shirtwaists at ninety-eight cents? You may censure me again, gentlemen, but I held that the law was not made to render education impractical; that wherever a class was organized for a special, practical purpose, another textbook could be used. A few days ago the principal of a small high school in this county wrote me stating that the new freshman class was decidedly weak in English. The school had adopted a complete series of English texts, which met the needs of the average class, but all of these textbooks were too advanced for this particular class. I had to choose between the principle of uniformity on the one hand and the good of those pupils on the other. I could stand here all day, gentlemen, and recite instance after instance similar to those I have given. In every instance the choice had to be made between uniformity on the one hand and practical education on the other. In deciding the problem which your honorable committee is investigating, the choice is between uniformity on the one hand and practical, vital instruction on the other. If we adopt a uniform series, we must adopt textbooks that will contain bare, dry principles that may be applied anywhere. We shall rob our courses of the vital elements, for the vital thing in high school work is the linking up of the studies with life. Since life is not uniform throughout this great state, the "linking up" can not be uniform; the textboks should not be uniform. The people have been demanding in loud tones that the high school shall fit young people for life. Will the people take away the link that is being forged? Will they say to the high school people, "Make your schools practical; fit our children for life," and at the same time take away the very tools that are necessary to accomplish this great work? I leave that question to your honorable committee, and to the people of California whom you represent, confident that you will consider the interests of the young people paramount to any other issue.

Why should we have uniformity?

Turning from the educational phase of this question, let us consider for a few moments the practical side. Why should we have uniformity of high school textbooks in California? The argument that is advanced most frequently is that pupils who transfer from one high school to another must purchase new books in most branches. I wish to point out, however, that if high school textbooks are furnished free of cost by the district, the argument for uniformity loses all its force. The textbooks abandoned by the pupil when he leaves the district will be available for the pupil who takes his place, and the district into which the pupil moves will furnish him books from its shelves. Under a free textbook system, there can be no economic loss because of transfer of pupils from one district to another.

The one argument for uniformity.

There is only one other argument for state uniformity. State uniformity is necessary if we are to have state publication of high school textbooks. Now, I shall not depend entirely upon the educational argument against state publication, although that, in my judgment, is sufficient. I shall meet the proponents of state publication on their own ground. I purpose proving that state publication of high school textbooks is economically impossible.

State publication of elementary textbooks economical because of size of output.

It is an accepted principle of business, gentlemen, that it does not pay to manufacture goods in small quantities. There is a certain minimum of output, below which the manufacturer can not go without economic loss. Our plan of state publication of elementary school textbooks has been successful simply because there are enough pupils using each textbook to justify the printing of large editions. Under the law, no edition of less than 25,000 copies of each elementary school textbook can be printed. There is no textbook in the state series for elementary schools that is used by less than 40,000 pupils. This large and uniform demand makes the printing of elementary school books economical.

Why state publication of high school books is impractical.

When we turn to the high school we find only 76,000 pupils enrolled, just 10,000 less than the number enrolled in the first grade of the elementary schools. Each high school pupil will require about five textbooks of all kinds during the year. The total number of textbooks used in all classes by all high school pupils is about 380,000. In the high school, however, we have election of studies. There are over 100 branches in which textbooks are required. By dividing the total number of textbooks required by the number of subjects, we find that the average number of pupils using a textbook is approximately 3,800. To find the number of textbooks required for a four-year period of adoption we must multiply this number by two. The average number of textbooks required for a given subject in the high school for the four-year period would be 7,600. If an edition of 25,000 books were published, the average time required to exhaust the edition would be more than twelve years. Think of the advances in chemistry and physics during the last twelve years! If this system had been adopted in 1900 and an edition of American history had been printed, the latest event discussed in the textbook that would be in use now, would be the assassination of President McKinley. We should know nothing of Roosevelt, or Taft, or Woodrow Wilson! If an edition of civics had been printed, our pupils would be in the dark so far as the great civic and political reforms since 1900 are concerned. When we speak in averages, the futility from the educational standpoint of state publication of all high school textbooks is apparent.

The economic side.

The amount invested in one edition of any high school textbook would be considerable. We may reckon the investment at 5 per cent. Assuming that the state printing office can produce a book at a cost 25 per cent less than the price at which the state may obtain the book from the publisher on competitive bid, let us determine whether state publication would be economical. The cost of the book during the twelve years, with interest added, would be as follows:

First year	$1 00	Seventh year	$1 30
Second year	1 05	Eighth year	1 35
Third year	1 10	Ninth year	1 40
Fourth year	1 15	Tenth year	1 45
Fifth year	1 20	Eleventh year	1 50
Sixth year	1 25	Twelfth year	1 55

It will be noted that after the sixth year, the book would be carried at a loss, since we could obtain the book from the publisher for $1.25. The average cost for the twelve-year period would be $1.27½. State publication under these conditions would involve actual loss to the state.

Number of pupils using each book.

Fortunately, we do not have to discuss this question only in averages. We have data compiled from the official annual reports of high school principals which are made under oath. I have not had opportunity to check the statistics carefully, so certain minor inaccuracies may appear. However, they are sufficiently accurate for all practical purposes. I submit herewith a statement showing the number of pupils taking each subject.

TABLE SHOWING NUMBER OF STUDENTS USING TEXTBOOKS IN VARIOUS SUBJECTS.

	Number schools	Number pupils
English—		
Grammar	34	4,111
Composition—Rhetoric	254	25,643
Myths	216	11,649
English Literature (History)	187	5,465
American Literature (History)	69	1,530
Heroic Ballads	174	9,444
Oral English and Debate	59	4,639
Oratíon and Argument	130	3,381
Selections of Poetry	214	15,063
Selections of Prose	50	3,555
Journalism	9	68
Latin—		
First Book	250	8,493
Grammar	164	4,776
Cæsar	242	5,016
Beginner's Composition	162	3,647
Cicero	140	1,081
Advanced Composition	116	1,542
Virgil	127	713
Other texts	34	565
Greek—		
Grammar	8	76
Beginner's Greek	9	63
Anabasis	7	52
Iliad	5	22
Composition	5	62
French—		
Grammar	65	2,223
Beginner's French	60	1,516
Readers	50	1,474
Composition	33	891
German—		
Grammar	145	3,478
Beginner's German	145	3,148
Readers	159	3,532
Composition	91	1,282
Spanish—		
Grammar	144	6,187
Beginner's Spanish	128	5,098
Readers	135	5,746
Composition	89	2,626
History—		
Ancient	245	8,886
Medieval and Modern	242	6,339
English	135	2,382
American	256	8,432
General	8	307
Industrial	19	420
Civics	256	5,250
History Note Books	89	3,786
Economics	68	1,579
Sociology	4	85

	Number schools	Number pupils
Commercial—		
Bookkeeping	243	8,194
Shorthand Text	222	6,302
Speller	127	4,900
Law	131	1,374
Geography	87	799
Correspondence	97	3,665
Arithmetic	214	6,303
Accounting	24	425
Banking	16	292
Business Practice	26	481
Penmanship	104	3,981
Typewriting	188	6,772
Salesmanship	4	85
Advertising	4	76
Music Books	103	4,915
History of Art	9	480
Mechanical Drawing	38	565
Mathematics—		
Algebra, First Year	266	17,208
Algebra, Advanced	198	2,738
Geometry (Plane)	265	10,724
Geometry (Solid)	189	1,545
Trigonometry	170	1,032
Calculus	4	10
Higher Arithmetic	5	104
Mechanics	9	186
Science—		
Physics Text	225	4,178
Laboratory Manual	203	3,312
Chemistry Text	235	6,814
Laboratory Manual	205	5,536
Physical Geography Text	87	2,022
Laboratory Manual	61	944
Biology Text	51	1,390
Laboratory Manual	17	354
Zoology Text	13	385
Laboratory Manual	3	47
Physiology Text	34	1,232
Laboratory Manual	7	366
Geology Text	7	126
Laboratory Manual	------	------
Domestic Science Texts	115	2,952
Botany Text	68	1,712
Laboratory Manual	24	350
Household Arts Texts	50	1,588
Agricultural Texts	70	1,289
Manual Training Text	36	1,023
General Science	117	3,501
Other Subjects—		
Elocution	2	271
Dramatics	1	15
Psychology	2	52
Astronomy	2	85
Current History	1	22
Assaying and Cyanide	1	10
Mineralogy	1	11

Deductions from table given above.

I wish to point out, gentlemen, that we must have 12,500 pupils enrolled in order to use up one edition of a high school textbook in four years. On consulting the table, you will observe that there are only three subjects in which more than 12,500 pupils are enrolled. In more than half of the subjects, one edition would last twenty years or more. I do not wish to disturb the decorum of the occasion, but I can not resist the temptation to point out that one edition of Homer's Iliad would last just 568 years. Clearly, gentlemen, it would be impossible for the state of California to undertake the publication of so great a variety of textbooks in editions of 25,000. We are not facing a theory; we are facing an inexorable law of economics.

Can small editions be printed?

The alternative of printing smaller editions may be suggested. Let us consider an edition of 10,000 copies. We shall be obliged to lease the plates from publishing companies. Assuming that these companies would be willing to lease the plates on a 20 per cent royalty basis, the royalty on a book listed at $1.25 would be 25 cents. The total royalty for one edition would be $2,500. Two weeks ago, the State Board of Education employed the Rand, McNally Company to make plates for a third reader of about 300 pages. The expense was $975. At this rate the plates for a high school textbook would amount to $1,500 or more. When the publisher has deducted the cost of making the plates from his royalty, he would have $1,000 left, out of which he would have to pay the author's royalty. It is manifest, I think, that no publisher would offer plates on such conditions.

Shall we employ authors?

We have the alternative of state authorship, of course. If the writing of a successful textbook were comparable to the making of a suit of clothes, this alternative might appeal. Thirty years ago, California tried that plan in compiling elementary textbooks and it failed. Good textbooks can not be made to order. But let us assume that we can have them made to order. How long would it take a university professor and a high school teacher, working together, to write a textbook in physics or ancient history? A year would not be too long. It would cost at least $5,000 to secure a manuscript for either book. Two university professors recently submitted a 10,000 word manuscript in California history to the State Board of Education and fixed the price at $2,500. The average high school textbook contains 150,000 words. If we could secure a manuscript for $5,000, the authorship cost on a 10,000 book edition would be 50 cents per volume. Manifestly state authorship is out of the question.

I hope, gentlemen, that I have made my position clear. I am in favor of free textbooks for high schools, furnished by the district and selected from a list approved by the State Board of Education. If we fear that the publishers will charge the districts too much, let the state board be authorized to advertise for bids, stating prices at which books will be sold to the districts. If this plan is adopted, I am satisfied we can save at least 30 per cent over the present cost. I can see no objection to a law limiting the choice of the state board to five textbooks in each subject. This would provide a reasonable degree of standardization and would avoid the pitfall of uniformity.

In conclusion, gentlemen, I wish to leave this thought with you: Let us have the best high school textbooks at the lowest price for which they may be obtained; let the books be furnished free to the high school pupils of California; but let us not sacrifice our high school system nor check its development along popular lines.

Exhibit D.

STATE UNIFORMITY IN HIGH SCHOOL TEXT AND BOOKS.

[A paper read by Mr. Noel H. Garrison at the California State Convention of High School Principals, Fresno, December 22, 1915, and re-read at the meeting of the Legislative Committee on Textbooks, at Los Angeles, March 20, 1916.]

Mr. Chairman, and Members of the California Legislative Committee:

Before entering upon the discussion of the subject assigned me, I desire personally, and also in behalf of the state convention of high school principals, to thank the members of the California legislature who have honored us with this hearing. I would congratulate the school men present upon the opportunity thus afforded of discussing with our legislators this vital question, and I would congratulate our legislative friends upon the attitude which their presence here indicates. It augurs well for the schools, when our legislators are desirous of counseling with schools. This, however, is the natural and logical procedure, for the school men are or should be the most competent to judge as to the needs of the schools and it seems to me worthy of the most serious consideration of this committee and of the legislators to know that high school men are unanimous in their unqualified opposition to state uniformity.

Gentlemen of the committee, this fact that high school men and women are from conviction and without collusion a unit in this question should command your attention and does demand some satisfactory explanation upon the part of those who differ with them. I would not stultify myself nor insult the intelligence of this committee by discussing the trumped-up excuse of the connection between the book companies and the school men. Let us dismiss entirely this ''bogy'' of a book trust and its fancied connection with the school people. I resent even the suggestion of it and am bitterly indignant when I think of any man of ordinary intelligence who would pretend to be honest in such a contention, who would thus impugn my motives in so vital a matter, to say nothing of impugning the motives of all the high school teachers of California. It is preposterous to think of it. I would dismiss the matter with the emphatic statement that the California high school teachers are neither knaves nor fools, for they are certainly fools if they are in the power of a book trust without knowing it, and knaves they must be if they are knowingly acting under its influence.

We are met to consider the question of the state publication of high school textbooks. There are three phases of the problem as usually considered:

Shall high school textbooks be made uniform?
Shall high school textbooks be free?
Shall high school textbooks be printed by the state printing office?

These are three distinct questions, a fact which must be kept clearly in mind. Do not confuse the issue. Textbooks can be furnished free by the state, by the county, or by the district without their being uniform throughout the state, and certainly without being printed at the state printing office. Erasers, chalk, pens, etc., are furnished free to the pupils but they are not manufactured in Sacramento. I have no doubt that textbooks can be furnished free or at cost to the pupils through the board of education or the trustees at a saving of 30 per cent as was reported by Principal W. L. Glasscock of San Mateo to the California Council of Education. In fact, there are a number of high schools in California which are now furnishing books direct to the pupils at cost. There are, also, Eastern cities which are furnishing free textbooks to their pupils, but these are not uniform throughout the state. Saginaw, Michigan, is a good example of this. The pupils have the advantage of free textbooks but without the many disadvantages of state uniformity. I do not, however, desire to discuss the question of free textbooks *per se,* for which there may or may not be good and sufficient reasons, but only to consider the question of free textbooks in so far as this is related to the main issue, viz: the printing of uniform textbooks for the high schools by the state printing office. The question therefore, is this: "Shall uniform high school texts be printed by the state printing office?"

In the consideration of this problem, I desire to eliminate entirely the question of whether the printing of free uniform textbooks for the elementary schools is or is not desirable. I know that there are those present who would maintain that state uniformity has given the California elementary schools very inferior textbooks, considered from any and every point of view; that the schools are seriously handicapped by not being able to secure an adequate supply of books on time; that the supposed saving, which is but slight, is a great economic loss to the state by reason of the lessened efficiency of the school; that the saving is fancied rather than real, if all the overhead charges are added to the cost of manufacturing, such as: "interest on the investment, depreciation of plates, depreciation of plant, salaries of office force, transportation, postage, royalties paid to the author, etc." I say textbooks if they get the chance. I don't know of any time when the people have refused to vote for free texts when the opportunity was presented, and the reason why they do that is because they love the schools. They spend their money lavishly in support of our school system, and they are very proud and jealous of it, and whenever you can put before the people a proposition intended for the betterment of the educational system, you're going to get their undivided support.

"I hope your committee will see its way clear, after its investigations, to report at Sacramento next January the desirability of free textbooks in the high schools. The matter of state printing and of sectional textbooks, etc., are incidental questions, to my mind. The main question is the free textbook. The other things will take care of themselves."

Exhibit F.

[Brief Submitted by Various Interests.]

CALIFORNIA SCHOOL BOOKS

State Printing and Free Distribution Advocated for High Schools. Recommendation of a System Similar to Elementary Grades.

UNIFORMITY IN HIGH SCHOOL BOOKS,
  Selection of Texts by Most Competent
  Judges of the Best Books as the Standard,
  Saving of Time and Expense in Removals,
  Freedom From Book-Agent Solicitation,
  Home Production and Economy,
  FREE DISTRIBUTION,

vs.

IRREGULARITY OF TEXTS,
  Similar Arguments Once Used Against Present Elementary Texts,
  Claims for Individuality of Pupil, Teacher, Principal, School, District, County,
  Claims for Geographical Needs,
  The Book Publishing Companies, and
  Extravagance.

THE PEOPLE OF
THE STATE OF
CALIFORNIA.

The State of California adopted the free distribution, or state payment, of textbooks in the elementary schools in 1912. The success of this plan, in economy of production and satisfactory results, has become a monument to California's progress and an emulative incentive to other states.

If the furnishing of textbooks to the children of the elementary or grammar grades, without direct cost to the parents, is advantageous, why not, its advocates contend, adopt a similar system throughout the high schools?

When the measure for free distribution of common school textbooks was before the state legislature, its opponents asserted that there was no popular demand for such a system, but when submitted to a vote of the people, their approval was decisive. The success of state printing and distribution, since the inauguration of this plan, has been so apparent, that another vote upon free school books would undoubtedly include those for the high school students also.

Free Books Mean More and Better Education.

For nearly four years, California's elementary schools have been truly democratic. The state has furnished, without direct cost: school teachers, equipment and the textbooks. But the high school student is, or his parents are, compelled to purchase expensive books for that educational course. This cost is one factor in the explanation that but a small percentage of elementary grade students enter the high school.

The same forces which opposed the inauguration of free textbooks in the grammar schools are now opposing high school adoption. Some teachers, in the minority we trust, have taken a stand in opposition to state printing, as well as free distribution. This stand is certainly in the interests of the eastern schoolbook publishing firms who are furnishing texts to most of the states outside of California, and at a much higher price than it is costing our taxpayers.

California a Leader in Education.

If this State can save its citizens two hundred thousand dollars annually on its schoolbooks, the menace to trust control is apparent in most of the other states. Other legislatures are commencing to investigate our system and are looking to us for data. To perpetuate their grasp on the school books of the country, these corporations are willing to spend a considerable sum to hamper California's free distribution plan, and, if possible, to prevent her from including the books for the higher schools.

In considering the advisability of introducing state distribution of books in the high schools, we must base our conclusions largely upon the success of the system in the elementary schools. The following table shows the present cost of manufacture, amount of royalty, chargeable cost, costs in 1911, and prices paid by other states:

Comparative Prices.

Name of book	Mfg. cost	Royalty	Charge	1911 price	Publisher's price
Primer	$.085	$.048	$.15	$.22	$.32
First Reader	.078	.048	.15	.20	.32
Second Reader	.093	.0525	.18	.24	35
Third Reader	.113	.06	.19	.37	.40
Fourth Reader	.128	.09	.24	.42	.60
Fifth Reader	.129	.09	.24	.42	.60
Speller One	.103	.025	.14	.19	.25
Speller Two	.101	.025	.14	.19	.30
First Arithmetic	.104	.0525	.18	.26	.35
Advanced Arithmetic	.123	.09	.23	.41	.60
New Lessons One	.139	.0675	.23	.28	.45
New Lessons Two	.146	.09	.26	.46	.60
Introductory History	.142	.15	.31	.45	.65
Brief History	.211	.15	.41	.67	1.00
Introductory Geography	.203	.09	.32	.53	.60
Advanced Geography	.349	.15	.54	.73	1.00
Primer of Hygiene	.106	.06	.18	.41	.40
Civics	.168	.125	.31	.50	.75
Writing Book One	.028	.01	.04	.06	.05
Writing Book Two	.028	.01	.04	.06	.05
Writing Book Three	.028	.01	.04	.06	.05
Writing Book Four	.028	.01	.04	.06	.05
Writing Book Five	.028	.01	.04	.06	.05
	$2.519	$1.5135	$4.60	$7.25	$9.79

Present manufacturing cost, $2.519; royalty, $1.5135; shipping, etc., $.5675; California's total cost, $4.60. Price, under previous administration, $7.25.
Eastern publishers' price, $9.79.

State Publication Means Less Cost.

The cost of elementary school textbooks, in 23 states, where data has been available, averages about $10. The complete cost in California, including manufacture, royalty for copyrighted plates, and distribution, is less than $4.60. Even under a former nonprogressive, unbusinesslike administration, the cost, under state manufacture, was twenty-five per cent less than when purchased from eastern publishers. Printed under progressive methods the cost has been reduced over fifty per cent compared with costs from eastern concerns.

Recently a newspaper in this State, anti-administration in its character, in opposition to free textbook system stated that the state printing plant represented a valuation of a million dollars. The total value of the plant is but one-tenth this sum, and only about one-quarter of the equipment is used for schoolbook manufacture. The annual output of the plant is about a third of a million dollars and the annual saving, under economical management, more than sufficient to replace the entire equipment each year.

Taking the intermediate dictionary as an illustration, it is shown that even a greater difference in price is paid where the state does not enter into competition. These books are printed in the East and sold in this State for eighty cents to one dollar each. It has been figured that they can be printed in the State Printing Office for twenty cents. Even were a royalty of the same sum allowed for copyrighted plates, the cost to the students would be but half or less than at present. There are over 400,000 common school pupils, and, without including the 76,000 high school students, the saving of forty cents per book would amount to over $160,000.

Purchased Books and Free Distribution.

Books sold annually under eastern publication to school children, prior to state publication, 1884	151,250
Books manufactured by State and sold at cost in 1912	641,697
Books manufactured under present administration and distributed under free textbook plan in 1913	1,351,061

Books to be manufactured in 1916 will exceed the 1913 figures. There will not only be more books issued, but they will be of larger size, including colored plates and improved appearance.

Elementary School Books, Sold and Distributed Free, 1887-1914.

	Sold	Free	Royalty
Prior to July 1, 1904	4,052,327		$10,821 75
July 1, 1904–June 30, 1905	403,754		41,375 40
July 1, 1905–June 30, 1906	453,995		46,095 96
July 1, 1906–June 30, 1907	521,453		49,986 22
July 1, 1907–June 30, 1908	551,122		52,893 83
July 1, 1908–June 30, 1909	578,246		35,434 32
July 1, 1909–June 30, 1910	600,348		40.425 24
July 1, 1910–June 30, 1911	683,079		41,922 60
July 1, 1911–June 30, 1912	683,527		42,100 08
July 1, 1912–June 30, 1913	476,241	477,933	55,321 72
July 1, 1913–June 30, 1914	13,526	1,379,154	86,140 38
July 1, 1914–June 30, 1915*		529,116	30,188 87

*The new series of books being printed in 1916 will show an increase over any of these figures.

Comparative Costs.

The comparative costs and prices, on the twenty-three books* in the state series, are as follows: List price of eastern manufactured books, as sold in other states, and in California prior to state manufacture, $9.79. Cost and price of printed books in this State prior to the present administration: Manufacturing, $5.694; royalty, $1.556. Total, $7.25. Present costs: Manufacture, $2.519; royalty, $1.5135. Total cost, $4.60.

It will be noted that even with the great saving the state is now making with its own publication, we are still paying within 4½ cents of the former total royalty.

*The 23 books in the elementary school series have been increased to 29, in 1916, and the total saving will amount to a greater sum.

Economy Per Grade Over Old Method.

First grade	$19,539 20
Second grade	15,216 88
Third grade	31,281 41
Fourth grade	35,485 80
Fifth grade	47,477 85
Sixth Seventh grades Eighth	92,651 49
	$241,652 63

On the basis of a total of 400,000† children in the elementary schools, the comparative textbook costs are as follows:

†The present attendance of over 420,000 pupils would show a 5 per cent additional saving.

Total Costs.

Grade	Pupils	Eastern manufacturers' prices	Cost prior to Gov. Johnson administration	**Present cost**
First	86,880	$45,603 20	$36,489 60	$26,064 00
Second	52,472	34,106 80	25,711 28	18,889 92
Third	51,281	64,101 25	49,742 57	32,819 84
Fourth	49,980	64,974 00	46,481 40	29,488 20
Fifth	46,095	89,885 25	65,915 85	42,407 40
Sixth	41,969	167,876 00	118,772 07	75,224 51
Seventh	37,189			
Eighth	35,139			
	------------	$466,546 50	$343,112 77	$224,893 87

Saving in plan of state publication, over eastern purchase, when first inaugurated, 27 per cent. Comparison and amount saved by the State Printing Department: Cost of textbooks if purchased from eastern manufacturers, $466,546.50; cost printed in California, under the present administration, $224,893.87; amount saved annually, $241,652.63; or 52 per cent over old methods.

WHY NOT FREE HIGH SCHOOL BOOKS IN CALIFORNIA OR BOOKS PUBLISHED WITHIN THIS STATE AND SOLD AT HALF THE PRESENT PRICES?

High School Books.

There is no question that thousands of dollars can be saved to the taxpayers of this state, by having their high school books printed and distributed under a system similar to that prevailing in the elementary schools. Either under the method of state printing and selling at cost, in effect upon common school books for 28 years prior to 1912, or distributed under the present plan, a large amount annually can be saved the high school students and their parents.

No Present Standard in High School Books!

Objection to state printing may be made on the grounds that to furnish the variety of books called for by the different counties, districts or teachers, would make the cost prohibitive. This is true, and is the argument used by the agents of the various book companies now holding a monopoly on these textbooks. The same argument was used when books for the grammar grades were first considered. But the standardization of the textbooks for the elementary schools eliminated this difficulty and benefited their general educational facilities. Already legislation has been enacted and some slight progress made toward uniformity in the high schools of the state.

If Feasible in Grammar Schools, Why Not in the High?

In the elementary or common schools of California there are over 400,000 students using 23 books in the eight grades, at a series' cost of $4.60. The high school students number less than one-sixth, or a total of about 66,000. (The attendance in the elementary schools has increased to over 420,000, and in the high schools to 76,000.) A year ago, before standardization was undertaken, the number of textbooks on the selective list was over one thousand. The cost of a set of books, for the four years' course, is approximately $30, though in some sections of the state it is over $40. If a reduction of fifty per cent can be made upon these books (the difference between publishers' prices and state cost on elementary books) the saving would amount to 66,000 times 50 per cent of $7.50 (one year's books), or $247,500. The life of a book being about three years, this saving would amount to over $80,000 annually. As many books are kept by the owners and not transferred to other students, the total amount which could be saved would probably amount to considerably over $100,000 annually.

If the State of California has not the funds, at the present time, to inaugurate the free textbook system in the high schools, there is no good reason why the books can not be printed in the State Printing Department and distributed at cost to the students. This was done with the elementary school books, prior to the adoption of free distribution, and saved thousands of dollars to this State.

Textbooks can profitably be printed in the State Printing Office in editions of 10,000, and possibly less. With 76,000 students, is it not possible to print that minimum number on each book used?

High School Attendance Almost Prohibitory.

Why should it be necessary for a student, moving from one district to another, or from any one part of the State to another, to buy an entire lot or a great many new textbooks? And why should it be necessary for a student to take up an unfamiliar book when his studies are transferred to another school?

If it is thought necessary to omit printing certain books of which a small number are used, and which could more profitably be purchased outside, why can not the books upon standard subjects be made uniform in text, viz: English, Mathematics, History, Science, Music and Commercial Course.

Possibly those upon French, German, Spanish, Greek and Latin could be purchased economically by a state contract with publishers upon requisite number.

Why the Objection to Change in High School Book System.

The school book publishing companies of the East naturally object to losing several hundred thousand dollars' business annually in California, but more than the loss of this business they fear its effect on other states. California is one of the foremost in education, and the leader among all the states in doing its own printing. Other states have commenced to follow our plan in printing their own books, and the eastern book corporations can not afford to let us include high school books also without a fight.

Adding the high school books to California publication will mean a saving of at least $100,000 to our taxpayers, and a corresponding loss to the book companies. That they will fight against this financial loss to themselves is evident.

School Teachers Opposing.

When free distribution of books was first contemplated for the elementary or grammar grades, and the bill of enactment was introduced in the legislature, many of the school teachers fought against it. Unfortunately, in the present advocacy of ''printed-and-sold-at-cost high school books,'' a great part of the teaching fraternity, at least many of the leaders, have put themselves in the same position.

We do not believe that the greater part of our high school teaching fraternity have thus aligned themselves for any other motives than their desire for an unlimited number of selective texts. But we question their good judgment, their attainment of better teaching facilities, and their consideration of our taxpayers' burden.

Some of the teachers argue that there should be a difference in the textbooks used in a school with a large supplementary library, and one without. We concede that supplemental books are valuable for the student in advance of his class and in research work, but believe their value does not detract from the need of a uniform standard textbook for the city and country student. They should, when available, be truly supplemental and not to supplant.

We believe the use of supplemental books is largely for the purpose of adding to the already lengthy list of books for which the taxpayer is compelled to pay, for under the state publication or the library system, the people pay the bills. But the difference between the two is:

no uniformity and unlimited volumes on the one hand, and uniformity and economy on the other.

Possibly this committee is not aware of the fact that supplemental books are now being forced on the children in the elementary schools. Through the importuning of salesmen for the eastern publishing houses, and the recommendations of some of the teachers, the elementary schools are being loaded with "supplemental" books through the libraries. We can cite you instances where the state series of texts in the grammar schools has been ignored and supplanted by these supplementary books. This appears to the proponents as a well-laid plan to discourage the use of uniform texts in our elementary schools, and to add to the cost of the common school system. Supplemental books may be of value as supplements, but we believe that the recognized text should come first. If more study or reading matter is needed, why are not the present standard texts enlarged to meet the needs?

The objection of possible contagion from the book that has been used by two or three pupils has proved negligible, though this was once the cry against the free textbook system; but it could certainly be brought against the supplemental, or library system, where but little check can be kept on its use.

At a former meeting of your committee, several teachers asserted, though not publicly, that they were even against the present uniform system of books in the elementary schools. Of course these same teachers are active opponents of the measure now before you, but we will venture to state that were the question of uniformity, excellence and economy of our present free textbook system endangered by relapse into the old diversified and extravagant plan, the people of California would vote, overwhelmingly, in favor of our present system.

We believe that the people of the State are in favor of home production where possible; in fact there are laws now on the statutes providing for this, but too often ignored. The State of California has been able to purchase its supplies within this State for the manufacture of its grammar school books, to pay its mechanics a better wage than is paid by the eastern publishers, and to compete successfully on its costs. We know that our production is not only more economical, the money expended left within the State, but that the workmanship of the product is superior.

It may not be out of place, right here, to present another phase of the question and leave it, without comment, for your consideration.

AMERICAN SCHOOL BOOKS MADE IN JAPAN.

(*Philadelphia Press*, Dec. 26, 1915.)

It seems almost absurd that many of the textbooks used in our schools should be printed and bound in Japan and exported to this country, but since the advent of the Underwood tariff the condition is true—alarmingly true—for the printing trade.

Time was when the highly colored A. B. C. books of the children, the fairy tales and the tinselled, embossed postcards of flamboyant color and fanciful design, were "made in Germany," much to the disgust of American printers. Even the highly-decorated cigar bands of red and gold with the resonant Spanish names had tiny "made in Germany" marks where few could see them. But there was no serious competition, in fact little, if any, in the matter of printing books in the English language, and particularly educational books in English. There was considerable disparity between the wages of German printers and binders and those employed in America. But the disparity was made up by our protective provisions. Under the Payne-Aldrich tariff schoolbooks were dutiable.

Under the Underwood tariff schoolbooks can come into this country free of duty. When the matter came up, objections to the proposed provisions for free schoolbooks were met with the argument that the light of education would be made to shine for all free of tariff impediments, and the complaints of the publishers were laughed to scorn.

But the prediction the publishers made then is coming true, and were it not for the European war today it would mean virtually the complete destruction in this country of a large portion of the printing business.

But Germany, unfailing producer of everything anyone could make use of, is paralyzed by the great war. Her fleets are swept from the seas and her foreign commerce destroyed.

And now the business of cheap printing has been taken up by Japan—the wonder nation of the East—with its cheap labor and its cheap supplies that can not be duplicated in this country for many times the cost.

Japanese compositors earn about fifteen cents a day, and pressmen and binders are paid in the same proportion. This is about one-twentieth of the wages paid in the United States for similar work. Paper, too, can be made in Japan for less than one-half the American cost of production.

And so it is that American schoolbooks are being reproduced in Japan with Oriental exactitude and exported to the United States for seven cents apiece. The same books, made in America, cost thirty-three and one-third cents apiece, with all the advantages of American machinery and increased per capita production by American workmen.

America has a high scale of wages. American workmen enjoy advantages and comforts of civilization such as never were available to any people in the history of the world. America is giving her children the greatest advantages of any people in the world today. . And it is right that she should. Her standard must never be lowered by permitting the unequal competition of the poorly-paid labor of other countries, and least of all of the teeming millions of the Orient.

When the free textbook amendment was before the state legislature it was opposed, we believe, from a knowledge of its enactment, by a majority of the school-teachers. While this opposition may have represented but a minority of the teaching fraternity, yet, if so, we do not know of more than a very few who actively or publicly supported it. Their contention at that time was that "uniformity" would destroy the value of tuition in the grammar or elementary schools, and that district or county selection should be made the unit.

The same vague problem is thrust forward today when a reasonable standardization and economical plan is submitted.

California has taken the lead in its elementary schools with its free textbooks and there are some who would have us wait until other states caught up with our present high standard before we advance farther. Other states are following California's lead in throwing off the grip of the book companies and are patterning after our system. Other states also are meeting the same opposition we met in inaugurating our free schoolbook system; some following the plan suggested to us for district or county selection. Oregon has tried it and we are informed that it is far from successful, at least when compared to our efficient and satisfactory system.

The profits made upon our high school books enables the eastern book corporations to maintain a publicity campaign and active opposition to any progressive and economical steps undertaken. While the proponents recognize the right of these eastern firms to conduct their business in this State, we believe the people of California should and will give their own business and welfare the first consideration. These corporations are legitimately organized for profit, but they are not entitled to an excessive one. So long as they use fair methods to protect their interests, we have only the incentive to advance our own welfare, but we are often called upon to answer unfair statements and garbled reports used in other states.

California spent over $80,000 for royalties in 1912, when the free textbook system was inaugurated, and additional amounts since. This figures a cost of over $4,000 for each elementary schoolbook for the one year. For the information of your committee, we present the following figures upon royalties paid for the period of the past four years: 1912, $42,100.08; 1913, $55,321.72; 1914, $86,140.38; 1915, $30,188.87; total, $213,751.05. Deducting $10,000 for the five small writing books, we find we have paid $203,750 for the eighteen textbooks in the series, or an average of $11,319.44 in royalty for each book. If the State cannot readily secure high school book plates upon a fair basis, would it not be reasonable to pay the same or even a greater amount in securing our own text and our own plates? Your attention is respectfully called to the advisability of direct purchase of copyrights.

When the elementary textbooks were manufactured and sold at cost, a fixed price was made for the book dealer. In the handling of the eastern manufactured high school books, the dealer is allowed about twenty per cent on his sales. We can, of course, expect the retail book dealers to oppose state publication, as it will lessen or remove their profits. We believe that the high school plates can be secured at a fair price, and would ask, through your committee, that this information be secured by the State Board of Education. The royalty amounts on the elementary textbooks figured as follows: 15 per cent on retail sales price in other states, 33 per cent on our total cost, and 60 per cent on our manufacturing cost.

The proponents have made no concerted effort to obtain endorsements or support of free or printing and sale at cost of high school books. We have and will await the recommendations of your committee. Neither have we attempted so far to obtain the views of the high school-teachers and principals. A few of the state leaders in educational affairs have taken such a radical position on this question, without consulting public sentiment or the arguments of economy presented by the proponents, that we have, for the time, left this investigation largely with your committee.

The working men and women of the State are heartily in accord with our efforts toward uniformity in textbooks, free distribution if feasible, or state production and sale at cost. The State Federation of Labor and other organizations representative of the working people of California, have gone on record as approving the plan proposed.

The proponents for uniformity of high school textbooks have as yet made no campaign among the legislators nor the school-teachers, but we are informed that this action is being taken by the opponents. A number of teachers have, without solicitation, given us their opinion that uniform books could be adopted with benefit to the schools and the pupils. Unfortunately, as they stated, any activity on their part for uniformity would jeopardize their positions. The following letter from a well known educator of the south, written to the opponents of uniformity, expresses, we believe, the views of many of the teachers and principals:

Chairman Principals' Textbook Committee:

Your circular to high school principals on the "question of free uniform textbooks printed in part by the State Printing Office" will receive due attention.

While there is a question whether high school students should be provided with their textbooks entirely at public expense, it is reasonably certain that parents now pay needlessly high prices for high school books. This morning I bought two books, of about the same size. One, a Spanish Grammar, cost me ninety cents (the regular price is a dollar) ; the other, a new book for civic classes, cost twenty cents. Why did one of these books cost more than four times as much as the other? The answer, I believe, consists chiefly in the fact that the grammar must be obtained from book dealers (our local dealer, by the way, getting no large profit), while the civic can be obtained from our State Printing Office.

After listening to a discussion of the subject in the Fresno Teachers convention, and after reading the article in the *Sierra Educational News*, to which your letter refers, I still hold the opinion that the State Printing Office books will be not only far cheaper, but also, on the average, much better than the books now in use. For if our State Board of Education will seek the advice of a committee of the best informed men in California on a particular subject, and if such committee make a careful investigation of the use of the various textbooks on that subject, it is evident that the quality of the textbook chosen thus by the same board will be better than the average quality of the texts now in use, since they are chosen now by teachers, principals and boards throughout the State after investigations that are often utterly inadequate for wise choosing.

Furthermore, the waste of time at the beginning of the year, due to difficulties in getting textbooks promptly into the hands of the high school pupils, in small towns especially, could easily be removed by state uniformity.

While I should like to stand with the majority of high school principals, the welfare of the schools, as I see it, requires me to advocate uniformity and state printing of the textbooks in order to reduce their cost and the difficulties in getting them, and to improve their average quality.

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Sacramento, California, May 11, 1916.

Committee upon Promotion of Uniform High School Books:

GENTLEMEN: Replying to your request for a brief opinion on "Shall textbooks be uniform for the high schools of the State," I would say emphatically, yes. It means carrying out the excellent system now followed in the elementary schools, a system against which no sound argument can be brought to bear. Those who are laboring the hardest in opposition to this proposed uniformity are chiefly high school principals who, under the present plan, can force their pupils to purchase what they please. They claim for themselves that they are laboring for the educational advantages of the boys and girls of the high schools, and that those laboring for uniformity are doing so for the pockets of the parents.

Mr. Garrison, principal of the Stockton High School, in a long article published in the *Sierra Educational News*, which was no doubt very pleasing to those who have books to sell, stated that "boys and girls were more important than dollars and cents." This and similar expressions are being continually used by high school principals and book agents all over the State and country. In my opinion, this is unfair, as it is making assertions of their opinions as facts, and inferring that those who favor uniformity do so solely for the purpose of saving money for the pockets of parents, to the detriment of the education of their girls and boys of the high schools. This I emphatically deny.

After thirty-four years' experience in school work, as teacher for six years, member of Board of Education for eight years and twenty years superintendent, one should have an opportunity to form an opinion.

Mr. Garrison stated in his article that he had made the discovery that "The high school is pre-eminently the period of self-discovery." We have been of the opinion that he was the same boy who attended the grammar school—just a little more developed—but Mr. Garrison says that he is not, that nothing along the line of his grammar school plan will fit him, and uniform textbooks would not fill his needs. All my experience has not shown me a basis from which to reach this conclusion. There is one thing which I think I have learned to my own satisfaction and that is, that the means to be used to make one a scholar is to develop the powers of reason by study. It matters not what kind of textbook one may use or what kind of teacher he may have, he can never become a scholar unless he develops his reasoning powers by study.

There are now a number of good high school books in use, without a doubt. I have been informed that the State Board of Education has signified five as the minimum number from which the high schools of the State can select. Perhaps the merits are about equal upon the whole; then why could they not go a step farther and select one as the best for all?

Many of the advocates of the go-as-you-please plan claim that different schools and different localities require different textbooks. This is a dream. The city high schools and the rural high school can and should use the same textbooks. The book should be complete, and if it should have anything in it that could not be understood without assistance that was not at hand in the rural school, it could be omitted; that is all there is to that.

This claim that there should be a different book for different high schools reminds me of the man who cut a large hole in his fence to let his dog pass through and a small hole for his cat to pass through. I have read a number of articles denouncing the uniform high school textbook plan and favoring the present go-as-you-please plan, and it appeals to me make-shift argument; possibly the best that can be offered in behalf of the scrambled scheme of high school textbooks.

Answering the main points of contention, brought out in brief submitted by opponents to uniformity, we submit the following:

The question before your committee is that of superior education and textbook economy, rather than education versus economy.

We believe that the burden of proof rests equally upon the proponents and opponents, as the State has proven its ability in the past to publish textbooks at a considerable saving to the people and to the State. The proponents are advocating the reasonable uniformity in all textbooks, and state printing, if the work can be handled more economically than by outside purchase.

While the statement is made that uniformity would react to the disadvantage of the high school system, and that it would not be feasible, we believe that the burden of proof should be assumed by the opponents and a plain statement given your committee why at least the standard subjects can not be made uniform and taught from the same books throughout the State. We agree with the teachers that educational progress in this State is of greater moment than the economy of a few dollars, but when uniformity means a lessening of the whims or arbitrary selection of books by the individual teacher, principal, or school board and county superintendent, the question of the reducing of the costs should be given careful consideration. If we agree that a standardization of books upon certain subjects will affect the educational system, we do not believe that it will materially, or in any sense detrimentally, affect the efficiency and development of the high school system. We are pleased to learn from the oral argument presented by the opponents and by their brief submitted, that they are in favor of free textbooks for the high schools of the State. We are rather inclined at this time to submit the question: In their indorsement of free books for the high schools, why have the opponents left this proposal and propaganda to the printers and the working people of the State? And in the reduction in the list of superfluous texts why have not the teachers been in the vanguard? Arguments have been used in the East against the State Printing Office and its publication of elementary school books which could not be given general publication here. We have been advised, at different times, of articles appearing in school publications, purporting to be legislative and public criticism of the conduct of the State Printing Office, but which, in reality, applied only to the regime of five years ago. Some of these articles appeared in the *Western Journal of Education*, but, so far, we have heard no reply by the school fraternity of this State to the scurrilous articles in their own magazine. Answers to these untruthful statements, by the state printer, have been refused publication.

The recommendation has been made to your committee, by a representative of the opponents to uniformity, that your committee recommend to the legislature a measure providing free textbooks for the high schools of this State. Undoubtedly, a considerable sum can be saved to the districts, schcol, and pupil, by large purchases, and we most heartily advocate this plan as one feature of progress in supplying books to the children. Your committee can readily see how uniformity would also benefit in this instance, for undoubtedly the less variety and number of books, the greater economy in the purchase. It is presumed that under such a system books for all sections of the State containing the same text would be purchased at one time. This is, at least, a great forward step in uniform buying, if not in uniform texts. The assertion is made that the average amount expended by each pupil for textbooks is, approximately, $6 per year, or $24 for the course. Our former figures were based upon a cost of $30 for the four years, but later investigation leads us to believe that it is much greater. In Sacramento, a fair example between the larger and the smaller sections, a cost is shown upon textbooks, without including the reference books, small minor texts and blanks, of the sum of $40. The opponents, while advocating free textbooks in the high schools, state in their brief that the cost thereof should be borne by the districts rather than the State as a whole, and that several districts are now successfully following this plan at a considerable aggregate saving. The difference of opinion on this point between the proponents and opponents seems to be the selection by the district versus that of by the State. We submit the argument that if a small district and its teachers are capable of selecting standard books for those pupils in that vicinity, the State Board of Education, or a similar centralized body, is far more capable of making the selection for the whole State.

The opponents make the plea that the individuality of the child must be considered, and the necessary books selected. We submit the argument that if any standardization is observed, even within one classroom, the teacher can not select a book fitting that class as well as the State Board of Education can select the books for the separate schools.

The argument is also made that books must vary in the different sections of the State, and that a variance must be observed between the agricultural, industrial, mining and horticultural sections. We can not see that there can be any difference, even in districts of widely-varied industries, between the standard subjects and textbooks upon Mathematics, English, History, Science, Commercial Course and the foreign languages, or even upon the minor or selective subjects.

Uniformity and standardization are the rule today in almost every line of industry; not alone in the consideration of economy, but progress in this modern period has shown the advisability of selecting the known best. If experiments are necessary in the high school system of the State, would it not be more feasible and more just to conduct these on a smaller scale than throughout the whole State? The one great question to be settled by the school faculties of California and by our State Board of Education, is, who is best fitted for this work—our leading educators or the teachers of those smaller counties and sections where progress has not made such rapid strides?

The opponents have gone to some extent to convince you that certain books printed in large editions would last an indefinite time. We partially agree with them and would not propose to print a book and attempt to force its use for a period longer than good judgment would dictate. However, in the illustration used, we would be pleased to learn how Homer's Iliad has been changed in the last twelve or even twenty years.

The proponents do not advocate, nor have they submitted, any argument in advocating a rigid uniformity on all texts in the high schools. We believe that progress will best be continued by allowing some latitude, but we are most emphatic in stating our position against indiscriminate and boundless latitude. Individual teaching of the child is desirable, we believe, but is it feasible in our common school system? Is not the same variety of intelligence and adaptability observable in a class in Del Norte as in a class in San Diego? Where special conditions arise and have to be met, and where the needs of special classes have to be considered, particularly in industrial centers and night schools, we see no objection to the selection of special texts.

We have submitted the argument that in uniformity not only could a great financial saving be made to the State and a needless expenditure saved to the pupil who transfers from one locality to another, and must necessarily buy a new set of books, but a saving of time and energy would also be accomplished in not forcing the student to take up new books. It is argued that this moving factor is small in number, but we submit the fact that were the studies and text of greater uniformity, it would not be necessary for a pupil desiring to enter a university to take a rigid examination.

We believe that even this small moving element should be given your consideration. Based upon the book-costs in Sacramento, were the pupil compelled to purchase new texts for the year, it would amount as follows:

	English	Mathematics	History	Science	French	German
First year ---------	$3 20	$1 00	-------	$1 00	$1 40	$1 35
Second year ------------	2 50	80	$1 50	1 30	2 05	3 65
Third year --------------	2 65	1 40	1 50	5 60	2 95	2 10
Fourth year ------------	4 85	75	3 75	1 25	1 15	2 55

	Latin	Spanish	Greek	Domestic Science	Music	Commercial
First year --------------	$1 00	$1 25	-------	$1 10	$1 10	$7 20
Second year ------------	3 05	----------	$1 50	1 10	1 10	2 20
Third year --------------	3 05	----------	3 00	----------	1 10	6 10
Fourth year ------------	4 20	----------	1 50	----------	1 10	----------

Assuming that the pupil takes up but the subjects of English, Mathematics, History, Science and German, the costs for each year's books would be: first, $6.55; second, $9.75; third, $13.25, and fourth, $13.15. If only two per cent of the pupils are compelled to change books on account of a change of residence, the cost for the first grade alone would be approximately $5,000; an unwarranted expense, we believe.

The claim is made that the high school and its course of study is entirely different from that of the elementary school, and that while uniformity of textbooks is good in the lower school, such a system could not be used in the higher. Claims are also made that we are dealing with almost a new boy or girl, but we fail to see it, or to note as great a difference between the higher grades of the elementary school and the first grades of the high school as there is between the first and last grades in the elementary school itself.

The argument is made that uniformity of text in the high schools is not as feasible as it is in the elementary schools, because the high school and its progress is of comparatively recent origin. We submit the question that, because it took a great many years to arrive at our present satisfactory textbook system, should it, in these modern times and age, be necessary to follow the same delay in inaugurating this progressive movement in our high schools?

The argument that high schools have made a phenomenal growth in the past decade is also an argument that where it may be feasible to print but a few of the standard books at this time, yet the rapid growth will mean a greater number of such books which can be printed later although not feasible at present.

We do not argue that all the books in the high school system can be printed economically at this time within the State. There are some of which so small a number are used that this would not be feasible. The question of what would prove an economical production is only one of where the State can print the book for the same, less, or at a considerable reduction under the amounts now charged. It would not be good policy for the State Printing Office, or those advocating state printing, to recommend the printing of any books which could not be more economically handled here than elsewhere.

Even under the present system without any degree of uniformity, we find that a considerable saving can be made, and respectfully call your attention to the accompanying figures:

Book	Present retail price	Wholesale—20 per cent off	Cost 10,000 at retail	State Printing Office				Cost, each, State printing	Saving on 10,000 copies
				*Plates		†Composition			
				5.000	10.000	5.000	10.000		
English	$1 10	$0 88	$11,000	$2,000	$3,900	$1,400	$2,100	$0 39	$7,100
Civics	1 25	1 00	12,500	2,300	4,500	1,600	2,500	45	8,000
Science	1 00	80	10,000	1,800	3,500	1,300	2,000	35	6,500
Economics	1 00	80	10,000	1,900	3,700	1,600	2,200	37	6,300
Algebra, elementary	1 00	80	10,000	1,800	3,500	1,500	2,100	35	6,500
Algebra, advanced	1 40	1 12	14,000	2,600	5,000	2,200	3,300	50	9,000
Geometry, plane	80	64	8,000	1,600	3,000	1,400	2,000	30	5,000
Geometry, solid	75	60	7,500	1,400	2,800	1,100	1,700	28	4,700
Bookkeeping	1 40	1 12	14,000	2,500	4,800	2,100	3,000	48	9,200
Spanish Grammar	1 25	1 00	12,500	2,100	4,000	1,400	2,100	40	8,500
									$70,800

*Based on 25 per cent royalty on wholesale price of books; included.
†Composition figures less; possible if copyrights are purchased.

The above are but a few of the high school books, including only the principal subjects.

The argument is made that the elementary school books are printed in editions of 25,000 or more, and this would be impossible with the high school books. This is a question of economy in production, and if the books can be successfully printed in 5,000 lots, or even less, there can be no argument upon this point. The proponents ask your committee to consider the advisability of printing those books which can, at present, be printed economically, and which can be included under a more uniform system, and that some recommendation be made for the wholesale purchase of those books whose limited number does not make economical state production possible at this time.

We believe that your committee could recommend the home manufacture of such books as it is possible to print economically, and that the matter of free textbooks be considered from a separate angle. We ask you to consider the subject under discussion from the viewpoint of the common people of the State and the taxpayers, rather than that of the school teachers or of the allied printing industries. We believe that the interests of the people as a whole should be considered rather than the arguments of the teachers for a possibly satisfactory present system, or of the printers of the State and their pleas for home production.

The matter of state authorship is one which will need careful consideration, and should be taken up at a later period. We have been informed that the California authors' work may be popular in the east, while eastern authors' books are sought in California, yet this is a subject that we do not feel competent to advise you upon now. The opponents have stated that the very extensive list of books used a couple of years ago, and the latter extensive list in use at the present time, can be reduced to five on each subject. We must submit the argument that if the former ten or twenty books on each subject can be reduced to five, it can be further reduced to a lesser number.

It is claimed by some that the vast number of selective books is necessary for experimentation in growth and progress. But the advocates of a standardized system claim this extravagant plan is unnecessary. It may be true that additional books, other than a standard set, may be advisable for trial, but it does not seem just to the students of our high schools to double the cost of their books to accomplish this end. If we may use the following illustration, we present it as a parallel: In building the state highway, the subcontractor in small stretches of highway was not allowed to use his individual judgment as to material, but it was designated by the central administration. Where experiment was deemed advisable, a small section was selected under the supervision of the department. We believe, if it is advisable to try experiments in books, the State Board of Education should be qualified to make such trials to a limited extent in certain schools for comparison. Has the local authority, vested with the selection of the books for a school or class, the opportunity of judging between all the available texts, and if so, how are all the various published books obtained by these teachers?

Naturally, every teacher, principal, city or county board, striving for what they themselves deem best, wish to use their individual judgment or opinion. This, no doubt, would be feasible did the results justify the means, and were it not the means of doubling our textbook costs. No well-conducted business would allow subordinates such individual action, and no other department of state is so conducted. With all due respect to our splendid force of teachers in this State, who, however, gave no assistance in the promotion of the present textbook system and who have offered no aid in the proposed plan, the needs of students and the expense to their parents should be paramount.

We have not yet heard an argument against the proposed ''home production in school books'' that can not be readily answered. The eastern book publishers, in their efforts to discredit our present common school book system, and the adding of high school books, used and are using many subterfuges. They have employed journalists and others in this state to discountenance the State Department of Printing, and have flooded other states with statements that they would not dare to employ here.

The proponents of the present agitation for uniformity and economy in high school textbooks have proposed this in good faith. If they can be shown that a standardized system of books is not for the best interests of the school children they will not further advance it. If they can be shown why a student in Del Norte should be taught from an entirely different set of books from one in San Diego, or why schools in neighboring districts should have the same dissimilarity, making it necessary to buy new books on every change of residence, we believe the taxpayers of the State should know the reason.

While the proponents of the measure before you may be mistaken in some of their arguments presented, yet we contend that on the whole it has been based upon common sense and good judgment, and one in which the people of the State are surely interested and approve. If, in your judgment, and in your recommendations to the legislature, you do not deem it wise to recommend all that has been proposed by the proponents, we believe the people of the State have secured and will derive much benefit from the consideration of the question before you.

The adoption by the state of home production and economy in printing its elementary school books, and its recent adoption of the free textbook plan, took considerable educational work and many years to accomplish. We can hardly believe that a similar plan for the high schools will be delayed the same length of time, yet we realize that it is a matter of evolution, and when the alleged insurmountable obstacles can be removed, it will mean, as we believe it, a better system in the high schools of the State.

Like the textbook question in the common schools, a few years ago, when the people of California fully realize what economical manufacture and distribution means, they will also demand that the high school books be included in the same system, and at least sold at cost (at half the present prices) until such time as the state can include them under the same free distribution plan.

No doubt your committee has read the Superintendent of Public Instruction's report upon "History of the California Textbook Plan," and noted some of the points brought out. We submit several extracts which may have some bearing upon the question before you:

> Much scandal had gathered about the supply of the public schools with textbooks (in 1884, before state publication was adopted), so many charges of corruption alleged to have been done by the book houses among school officers and school boards, that many would be satisfied with textbooks published (by the state) at more expense. But the cost has been one of the most gratifying things about the enterprise.
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> Every teacher preferred to use some favorite textbooks, that he had been brought up on, perhaps, and to be obliged to give these up for something else again caused loud verbal explosions on every hand. There were hundreds of book dealers in the State who were cut out of the profits of retailing books, and they were frequently heard from. The great publishing houses had agents circulating in every part of the land, whose religion it was to everlastingly damn the whole idea of state publication.
>
> The leading educators almost universally followed suit. Institutes, clubs and associations condemned it. No educational gathering was complete that did not take a fall out of the state textbooks. Never did anyone have a good word to say for them in public. They were an impersonal sort of thing, like the weather, that any one could criticize and abuse without fear of unpleasant consequences. Doubtless, at this time, any books whatever that could have been printed by the state would have met the same fate. Yet it is worth remarking that the people of the State who do the voting have never failed to uphold the California plan by overwhelming majorities whenever an opportunity has come to them, even down to present date.
>
> The committee (textbook committee at time of inauguration of State printed books) went to work enthusiastically, but had difficulty at first in getting the publishers to lease the plates of their successful books. * * * Public clamor against graft died down; the book companies were ameliorated; the teachers had the same books as other people; the dealers had accepted the situation.
>
> In his report to the Governor in 1888, State Superintendent of Schools Ira G. Hoitt said: "The State of California has taken a step in the right direction in

furnishing books of its own manufacture to the children at cost. It should, in my opinion, go one step further and furnish the use of textbooks to all children attending the public schools."

The Superintendent of Public Instruction stated recently: "Certainly the state would not recede from or give up its textbook system under any circumstances. It is running more smoothly, giving more general satisfaction, and meeting with less opposition than ever before in its history. The teachers find great comfort in being relieved of the task of badgering the children to buy books and in being able, for the most part, to start their classes all together and fully equipped on the first day of the term."

Exhibit G.

STATE UNIFORMITY AND STATE PUBLICATION OF HIGH SCHOOL TEXTBOOKS.

[The accompanying brief and arguments are submitted by the joint committee, representating various educational interests of the state, in answer to the advocates of state uniformity and state publication of high school textbooks.

Important issues raised relate to the comparative actual cost of state published books and those purchased in open market; the plan of furnishing books free by the school district; who were the early advocates of free textbooks; educational leadership in the state *vs* state uniformity and state publication of elementary texts; advantages of freedom in selection of books to meet the needs of different localities, and like significant issues.]

I.

ECONOMIC CONSIDERATIONS.

PROPONENTS MIS-STATE REASONS FOR TEACHERS' OPPOSITION.

In the brief and arguments which we submitted at Los Angeles and San Francisco we did not question in any manner the sincerity of the proponents in urging state uniformity of high school textbooks. We had hoped that in these discussions our own sincerity would be respected in like manner. We have stated clearly and forcefully that we represent the educational interests of the high school pupils of California; that our sole aim is to preserve the efficiency of the high schools of the state and prevent any action which will tend to render high school instruction less practical. We must, therefore, challenge the statement that the majority of the teaching profession are opposing state uniformity because of a *"desire for an unlimited number of selective texts."* To intimate that the great majority of teachers are actuated by such a motive, or by any motive other than the conservation of what we earnestly believe to be the best educational interests of California, is an unwarranted reflection on the sincerity of the great body of teachers of this state.

SARCASM WORSE THAN FUTILE.

We must also challenge the sarcastic reference to the attitude of the teachers in advocating free high school textbooks. *"Sarcasm,"* say the proponents, *"is futile in argument, but we are inclined to submit the question: With their indorsement of free textbooks for high schools, why have the opponents left this proposal and propaganda to the printers and the working people of the state?"* In reply we have only to quote a report of the California Council of Education, in which a system of free textbooks for California schools was advocated by the teachers as early as 1902. (See Exhibit A.)

The teachers of California have not as the proponents affirm, been slow to show *"consideration of our taxpayers' burden."* On the contrary, they were the first to advocate free textbooks for the schools of the state. In the light of this fact we shall concede that the sarcasm of the proponents concerning our advocacy of free textbooks is indeed futile, as they have suggested.

REAL REASON FOR CALIFORNIA'S LEADERSHIP IN EDUCATION.

It is very gratifying to note the caption on the proponents' brief—"*California a leader in education.*" Our state is, indeed, one of the most progressive of all the American commonwealths, thanks to that very body of teachers whose "*good judgment and consideration of the taxpayers' burden*" is questioned by the proponents of state uniformity. The proponents would have you believe that this leadership is due to the system of state uniformity and state publication of elementary school textbooks. We wish to point out that the only general estimate of the efficiency of school systems in the United States is that published in 1912 by the Russell Sage Foundation. In that estimate the high schools of California, working under a textbook system which the proponents have denounced, were *second* in rank, while the elementary schools, working under a textbook system which the proponents consider ideal were *fourth* in rank. We would also point out that every one of the twelve states at the bottom of the list have state uniformity of high school textbooks, while none of the twelve states at the top of the list had state uniformity of high school textbooks at the time the report was compiled. Surely the proponents erred in offering California's leadership in education as an argument for state uniformity.

UNIFORMITY MEANS A STRAIT-JACKET.

While it is quite beside the question to discuss the use of supplemental books in the elementary schools, and the alleged attempt to substitute supplemental books published by Eastern publishing houses for the state-printed textbooks, we can not refrain from suggesting that the laws of California give the proponents a ready and efficacious remedy for any violation of the textbook law. While the question raised has no direct bearing on the matter under discussion, we must solemnly protest against the sweeping allegation of wrong-doing on the part of our co-workers in education, the elementary school teachers of California. We would respectfully suggest, also, that this statement concerning the use of supplemental material in the elementary schools represents fairly the attitude the proponents would assume under a plan of state uniformity for high schools. They would deny the right of the high school to use supplemental material. They would insist upon absolute uniformity in the instruction offered in the high schools of the state. This argument offered by the proponents only confirms us in the belief that the proponents are preparing for the high schools of California a strait-jacket which will check our efforts to adapt education to the needs of the students and to make our instruction practical.

TEXTBOOK PROBLEMS OF HIGH AND ELEMENTARY SCHOOLS DIFFER GREATLY.

In an effort to discount the substantial arguments against state uniformity presented by the opponents at Los Angeles and San Francisco, the proponents state that the same arguments were used when books for grammar grades were first considered. In our first brief we pointed out clearly and specifically the difference between the elementary and high school situations. * * *

AN ANALYSIS OF THE ANONYMOUS LETTERS.

The proponents have submitted two letters written by California high school teachers in advocacy of state uniformity. It will be noted, however, that the censor has deleted the names of the teachers, who are fearful that publication of their names would jeopardize their positions. Waiving discussion of the alleged Reign of Terror among the high school teachers of California because the absurdity of the allegation is so patent, we shall analyze some of the statements made by these two people.

First of all, we would have you note the statement on page 10 of the proponents' brief that *"the proponents for uniformity of high school textbooks have as yet made no campaign among the legislators nor the school teachers, but we are informed that this action is being taken by the opponents. A number of teachers have* WITHOUT SOLICITATION *given us their opinion that uniform books could be adopted with benefit to the schools and the pupils. * * * The following letter from a well-known educator of the south, written to the opponents of uniformity, expresses, we believe, the views of many of the teachers and principals."* Then follow the two letters.

Recalling that these letters were written *without solicitation,* we are at a loss to understand why the second letter addressed to the Committee upon Promotion of Uniform High School Books should begin as follows: "*Replying to your request for an opinion on 'Shall textbooks be uniform for the high schools of the state?' I would say emphatically, yes.*" As an unsolicited letter, it is indeed remarkable.

The first Unknown Principal has undertaken to compare the cost of a Spanish grammar published by a book company, with a little booklet containing the federal and state constitutions, published by the state printing office. He states that he was surprised to find that the Spanish grammar cost 90 cents, while the book in civics cost only 20 cents. He forgot to take into account the fact that the authors of Magna Charta and the two constitutions made no charge for their services in compiling the material published in the book in civics, while the author of the

Spanish grammar, realizing that he must eat, had demanded a certain royalty. Moreover, he did not know that the plates of the book in civics were made for the Legislative Counsel Bureau; that they were paid for by that bureau; and that the State Board of Education sold the book to the high schools for the actual cost of printing and binding.

COST OF TEXTBOOKS UNDER PRESENT SYSTEM.

The proponents have laid great stress upon the cost of high school textbooks under the present system and have challenged the estimate of $6 for each pupil as the average annual cost of high school textbooks in this state. On page 14 of their brief they give what purports to be a statement of textbook costs in the city of Sacramento. The cost for textbooks in Sacramento for the first year, according to these figures, is $6.55; for the second year $9.75; for the third year $13.25; and for the fourth year $13.15. These figures, we have been assured, are authentic, since they were secured through a *high school pupil*. Assuming that the most reliable figures could be secured through the office of the principal of the Sacramento High School, we asked for and obtained a statement, showing that the average cost was $7.21 per pupil, including all the necessary bookkeeping forms, which are not textbooks in the ordinary sense. The original statement of the principal of Sacramento High School is submitted to the committee for its consideration. (Exhibit B.)

Realizing the danger of basing a conclusion on insufficient data, we obtained statements from seven high school principals concerning the cost of high school textbooks. Each statement is signed by the principal of the school concerned and all of the originals are submitted for the consideration of your committee. (Exhibit C.)

Following is a synopsis of these statements:

	Range of cost	Average annual cost
San Diego	$5 25— 8 05	$6 78
Santa Ana		6 79
Auburn		4 31
Red Bluff		6 86
San Jose	4 19—10 61	7 40
Chaffey Union		3 90
Gilroy		6 00
		$42 04
Average		$6 01

These figures are based on the theory that each pupil has purchased a new book in each subject. The principals estimate that the figures should be reduced by 25 per cent at least on account of the use of second-hand copies. This would make the average amount expended annually about $4.50 for each pupil.

COST OF TEXTBOOKS FURNISHED FREE BY DISTRICT.

In the first brief which we submitted to your committee we pointed out the desirability of maintaining the present plan of adoption by the district from a state list, and suggested that books so adopted should be purchased by the district and furnished free to the pupils. We called attention to the fact that districts could avail themselves of the discount of 20 to 25 per cent which is invariably allowed by the publishers where books are bought in quantity. We maintain that this is not only the best arrangement from the educational standpoint, but that it is more economical than the plan put forth by the proponents. Fortunately, we have figures showing the cost under the plan which we have proposed.

San Mateo has been supplying textbooks free to the pupils of the high school, paying for them out of district funds. The cost for each pupil enrolled last year was $3.16. Books have been ordered for next year, and the cost thereof for each pupil enrolled is $1.72. It is probable, however, that the average cost for each pupil enrolled will amount to approximately $2.50 each year. We are filing with your committee the original data supplied by the principal of San Mateo Union High School. (Exhibit D.) We submit this plan, which will secure a saving of approximately 50 per cent in the cost of books, as far more worthy of your recommendation than the plan offered by the proponents. The plan we suggest will conserve the interests of the parents and taxpayers; it will render high school education free, and will maintain for the high schools that degree of freedom which is essential if they are to do successful work. As against the plan of the proponents, which is destructive, educationally wrong and economically hazardous, we offer you a plan which is constructive, educationally right and economically sound.

ESTIMATES THAT DO NOT CHECK WITH ACTUAL FIGURES.

On page 15 of their brief the proponents of state uniformity present figures purporting to show what the state printing office can save by printing high school textbooks in the more common branches. These figures are so remarkable that we have given them more than cursory consideration. The proponents state that they can save $7,100 on the publishers' list price of $11,000 for an edition of 10,000 books in English. You will note that the estimated cost of this edition is $3,900, including an allowance of 25 per cent of the list price for royalty. The royalty on this edition, based on 25 per cent of the list price, would amount to $2,750, leaving only $1,150 for the manufacturing cost. This is just 11½ cents per volume. Now every English book listed at $1.10 in use in the high schools of this state contains approximately as many pages as the Brief History of the United States, published as a state series text for use in the elementary schools. The manufacturing cost of this book, according to the proponents' own figures (page 2 of their brief), is 21.1 cents. We would request that the proponents explain this glaring discrepancy. Is the manufacturing cost of the Brief History too great? Or have the proponents suddenly discovered a labor-saving process that will cut the manufacturing cost of textbooks in two? We believe that the real explanation is that the figures given on page 15 are a product of the crudest guesswork.

A little further analysis shows that they are most unreliable. For every one of the ten books listed, the proponents claim a saving of 65 per cent on the list price. We ask you to compare this claim with the statement in the proponents' brief (page 4) that the saving through state publication of elementary school books is 52 per cent. Will the proponents explain how they will be able to save 13 per cent more in publishing high school textbooks than they are now saving in publishing elementary school textbooks? The utter absurdity of this claim is apparent when we recall that the number of copies of each high school textbook required annually will be about one-tenth of the number of each of the state series of elementary textbooks required.

HAS THE PLAN OF STATE UNIFORMITY IN CALIFORNIA ELEMENTARY SCHOOLS BEEN SO SUCCESSFUL THAT IT SHOULD BE EXTENDED TO HIGH SCHOOLS?

The proponents base their chief argument for state uniformity of high school textbooks on the success of state uniformity and state publication in the elementary schools. To show the success of the plan, they submit certain statistics which we will accept as a basis for this discussion. The claim is made that the state printing office is saving the people of California $224,893.87 per annum. The basis for reckoning the saving is the publisher's list price. We wish to point out, however, that in other states where state uniformity of elementary school textbooks prevails, the books are furnished by the publishers at a discount of 25 per cent on the list price. (See U. S. Bureau of Education Bulletin, 1915, No. 36, page 66.) If California were to purchase its books directly from the publishers, it could secure a discount of 25 per cent on the publishers' list price. We must, therefore, deduct from the amount of saving claimed by the proponents an amount computed at 25 per cent of the list price, or $116,636.62. This reduces the saving under state publication to $108,257.25.

We can not refrain from pointing out that previous to Governor Johnson's term the apparent annual saving on elementary school books, after deducting 25 per cent as discount, was only $6,797.11. These figures are computed on the basis of data supplied by the proponents in their brief, so they can not be questioned. Moreover these figures were made when the cost of manufacture was much less than it is to-day. In the circumstances, we can not concede that state publication of elementary school textbooks was successful previous to Governor Johnson's term, and we can not concede that it will be successful in the future unless we assume that the improvement in the state printing office under Governor Johnson's administration is permanent. We submit that state uniformity and state publication of elementary school books has not been so markedly successful as to justify the extension of the principle of state publication to high school textbooks.

RATIO OF ROYALTY TO TOTAL COST.

On page 15 of the brief filed by the proponents there appears a list of the high school books which they claim can be printed at the state printing office at a saving to the state. A careful study of the table and of data we have collected will show that these books will cost considerably more under state publication than under our suggested plan.

On page 9 of the proponents' brief you will find this statement: "*The royalty amounts on elementary textbooks figured as follows: 15 per cent on retail sales price in other states, 33 per cent on our total cost, and 60 per cent on our manufacturing cost.*"

	Royalty	Manufacturing cost	Total cost	Per cent of royalty on total cost	Number distributed, 1915-1916
Primer	$0.048	$0.085	$0.133	36%	17,169
First Reader	.048	.078	.126	38%	15,096
Second Reader	.0525	.093	.1455	36%	17,364
Third Reader	.06	.113	.173	34%	12,485
Fourth Reader	.09	.128	.218	41%	11,069
Fifth Reader	.09	.129	.219	41%	10,691
Speller One	.025	.103	.128	19%	31,785
Speller Two	.03	.101	.131	23%	20,446
First Arithmetic	.0525	.104	.1565	33%	29,225
Advanced Arithmetic	.09	.123	.213	42%	23,926
English Lessons I	.0675	.139	.2065	32%	16,097
English Lessons II	.09	.146	.236	38%	16,878
Introductory History	.15	.142	.292	51%	10,848
Brief History	.15	.211	.361	41%	16,796
Introductory Geography	.09	.203	.293	31%	21,254
Advanced Geography	.15	.349	.499	30%	23,910
Primer of Hygiene	.06	.106	.166	35%	11,985
Civics	.125	.168	.293	43%	9,722
Average				35%	

The table above shows the per cent of royalty on the total cost of each book and the number of each book distributed in 1915–16.

We would have you note especially that the total cost in most instances is three times the royalty cost, as the proponents have stated. The average is about 35 per cent. We are justified in assuming, therefore, that the ratio of one-third between royalty and total cost is a reasonably constant one. We shall apply this ratio in a later paragraph in estimating the cost of those high school textbooks which the proponents purpose publishing.

PROBABLE ROYALTY COST.

In our first brief we stated that it would probably be impossible for the state to secure the lease of plates to be used in publishing high school textbooks. The proponents suggested (page 9 of their brief) that information on this point be secured. Our correspondence with publishers confirms our belief. Even assuming that plates can be leased, we pointed out in our former statement that the royalty would be exorbitant on account of the small number of each book needed to meet California demands. The proponents have admitted that the royalty on plates for high school books will be higher than the royalty on elementary school books. (See page 15 of their brief.) They estimate royalty on high school books at 25 per cent, although the state is paying only 15 per cent royalty on elementary school books. The experience of Kansas in attempting to lease plates for high school books warrants the conclusion that if any bids for acceptable books are received, the royalty will be at least 30 per cent of the list price. (See United States Bureau of Education Bulletin, 1915, No. 36, page 66.)

Assuming, however, that the royalty charge will be 30 per cent, and the total cost under state publication will be three times the royalty, as the proponents have stated in their brief (page 9), the cost of an edition of 10,000 copies of each of the books mentioned on page 15 of the proponents' brief would be as follows:

	(1) Royalty	(2) Total cost per copy	(3) Wholesale price per copy from publisher	Total cost for 10,000, state manufacture	Price for 10,000 wholesale from publisher
English	$0.33	$0.99	$0.88	$9,900	$8,800
Civics	.37½	1.12½	1.00	11,250	10,000
Science	.30	.90	.80	9,000	8,000
Economics	.30	.90	.80	9,000	8,000
Algebra (Elementary)	.30	.90	.80	9,000	8,000
Algebra (Advanced)	.42	1.26	1.12	12,600	11,200
Geometry (Plane)	.24	.72	.64	7,200	6,400
Geometry (Solid)	.22½	.67½	.60	6,750	6,000
Bookkeeping	.42	1.26	1.12	12,600	11.200
Spanish Grammar	.37½	1.12½	1.00	11,250	10,000
Totals				$98,550	$87,600

(1) The royalty is computed at 30 per cent of the publishers' list price.

(2) To find the total cost per copy, multiply the royalty by 3. (The proponents in their brief [page 9] state that the royalty on elementary school books amounts to 33 per cent of the total cost.)

(3) Found by deducting 20 per cent from the publishers' list price.

LOSS OF THOUSANDS OF DOLLARS UNDER STATE PUBLICATION.

It will be noted that the loss sustained by the state on an edition of 10,000 copies of each book would be $10,950. To this must be added the cost of making the adoptions. The experience of the State Board of Education in adopting books for the elementary schools proves that the cost of adopting books is no small item. The commissioners and expert readers must carefully investigate the books submitted and the board must sit to hear arguments by the publishers' agents on the merits of the books. Under the present system the public does not incur any expense for adopting high school books.

The cost of adopting one elementary textbook is approximately as follows:

Cost of Adopting Book.

Per diem of seven members of State Board of Education, two days at $15 each	$210 00
Expenses of seven members of State Board of Education, two days at $5 each	70 00
Thirty days time of Commissioner of Secondary Schools, investigating book, preparing brief, etc.	333 00
Five expert readers to investigate book, at $25	125 00
Clerical assistance in handling extra work	25 00
Total cost per book	$763 00

For the ten books included in the table we must therefore add $7,630 to the cost, making the total loss to the state through state publication $18,580. Taking the publishers' wholesale price as a basis, we find that the cost of these ten books under state publication will be at least 21 per cent greater. If state publication of other books requiring smaller editions were undertaken, the loss to the state would be at least $50,000 annually. This is assuming that a state printed book would be equally well printed and bound and the materials used of quality such that it would last as long as the one purchased in open market. From an economic standpoint, therefore, state publication of high school textbooks is out of the question.

SMALL ENROLLMENT, LONG USE, GREAT LOSS.

It would be unjust to continue the use of any given book until an edition of 25,000 was exhausted, as this represents the minimum number which the state could successfully print. How long would such an edition last? A few examples will be sufficient:

Third year Latin texts would last 26 years; fourth year Latin, 32 years; German texts, 10 to 11 years; English history, 11 years; economics, 18 years; agriculture, 33 years; household chemistry, 53 years. Shall we mortgage the interests of the boys and girls of the next generation and be compelled to teach that which is not true?

II.

EDUCATIONAL PHASES OF STATE UNIFORMITY.

UNITY VS. UNIFORMITY.

We are interested in maintaining such freedom in the matter of textbooks as shall make it possible to fit them fairly to the diverse needs of classes formed for various purposes and coming from varying surroundings. We do not want growing subjects to be crystallized about any one man's ideas. We do not want the study of any of the great fields of knowledge to be limited for an entire state to what is given in one textbook. We do not want to place a premium upon the study of traditional subjects and ancient knowledge by furnishing such textbooks free, as suggested by the proponents on page 14 of their brief, while the new and vital stuff of the day is sidetracked because the pupil must pay to get it. We do not want the marvelous advantages of *unity* muddled in anybody's mind with the deadening effects of slavery to *uniformity*. Finally, we recognize the necessity of careful scrutiny of financial methods involved in the different ways of furnishing textbooks. We recognize the great value of some central body to guard against careless expenditures for textbooks and evident mistakes as to the reliability or adaptability of such books. We would strongly deprecate any change that would replace the benevolent power of such a central body, subject to reason and to changing conditions, with the technical restrictions and complicated laws and the embalming effects of large financial investments and unnecessary financial ventures on the part of the state.

TEACHERS FIRST ADVOCATED FREE TEXTBOOKS.

Let it be clearly understood that the educational people of the state are and have been generally favorable to free textbooks, and that the proposition, backed by careful investigation of the experience elsewhere, that textbooks should be free, was made by them long before any other bodies had even discussed the matter.

The state association in 1902 adopted the report of a committee favoring free textbooks, and later the Southern California Association adopted a similar report. It thus appears that the teachers of the state, whenever they have made any investigation of the matter, have reported favorably to free textbooks, and largely on financial grounds. But there has never been any report from any state teachers' body favoring uniform textbooks for high schools.

None of the objections to uniformity apply of necessity to free books furnished by the district, either with or without state aid. Local adoptions can have thrown about them all necessary care and oversight.

Limitations can be placed on expenditures, so that interests of economy can be conserved and still educational conditions and aims be fully met. The State Board of Education can adequately guard all interests concerned. Free books have their objections, but these objections apply to them if uniform just the same. They are largely objections of sanitation and administration.

It is worth while to note that we may compel districts to provide textbooks free within a given period, give state aid if we think best so to do, and still be free to retire from this position at any time we think best to do so, or provide for uniformity or state printing if we then think it wise, without financial loss to the state in making the change. On the other hand, the undertaking of production of these books by the state means not only uniformity, but long continued use of the same textbook, good or bad, and an investment by the state that renders any modification of our course in the light of experience, our own or that of others, most difficult.

THE TEXTBOOK A BODY OF KNOWLEDGE.

The textbook is primarily an accepted body of knowledge. Time was when we were able to include between the covers of a textbook pretty much all the accepted body of knowledge in any field. Today, such a body of knowledge in most fields would fill libraries. Different textbooks present different portions of this body of knowledge according as people and schools differ in their estimate of what is most fundamental. Even teachers differ frequently as to what they can give with greatest effect. While any good teacher may be able to present with average success any portion of his own field, a teacher is frequently found who can do work of remarkable effectiveness in some portion of the field where he has exceptional education, experience, or native talent.

Thus it is quite within the realm of reason that at times it may be in the interest of efficiency to make this work possible. Whether it is financially expedient is then the question for some responsible authority to decide. Where the young people in different parts of a state have been educated in a given field—say civics—in different textbooks, the equilibrium of the state as regards this field is maintained after these young people leave school and become an influential part of the state by the attrition of these various ideas and ideals upon one another. In other words, the larger education is the education the young people of the state give each other as they bring into the contact of real life their various views obtained in school life. It is fortunate for the educational breadth of any state if its school views have not all been obtained from the same book.

THE TEXTBOOK A MODE OF APPROACH.

A textbook is not only an organized body of knowledge; it is also a mode of approach. As long as schools were for ''born scholars'' only, and so-called culture was the sole aim of the school, Greek roots and science were on equal footing. Today all are going to school and are demanding that school work shall appear to them rational and worth while attempting. That it may do this, it must find its roots in the real life the pupil knows and must show itself in some degree applicable to the solution of the life problems he anticipates meeting. The demand is that education shall be practical, growing out of the surroundings of the pupil and helpful to him in living a larger and more effective life than he could otherwise do. The selection of a textbook is one important factor. It is the prescription.

The local physician may not always be able to make the wisest prescription, but it is very certain that a committee at a central point should not be expected to make the wisest diagnosis of the local needs. Cooperating in a reasonable way, a central committee could do the work of an expert consulting physician. The demand for more practical education, applicable to life and derived from real surrounding conditions, has given rise to a flood of new textbooks meeting this need with greater or less success. But those books adapted to one purpose, or to one set of conditions, are thereby less adapted to some other purpose or set of conditions. Such efforts are the hope of popular education. Stifle them and we are tied to the past. The body of teachers will naturally teach largely as they have been taught, but the cutting edge of progress for them and for the schools is the new textbook that links some field of knowledge up with life in a new and more effective way.

TEXTBOOKS AS TOOLS.

The textbook is not only a body of knowledge and mode of approach, but also a tool in the hands of the teacher. A teacher may, to be sure, teach any subject of which he is a thorough master, without a textbook, but only as he practically makes a textbook himself. Teachers of excellent abilities in the class room may be wholly unable to organize the equivalent of a good textbook even if they have the time, and the ordinary textbook on the market requires years for its completion. An occasional experiment without a textbook may be advisable for temporary reasons, but is not usually compatible with greatest efficiency.

How the conception of the textbook as a tool may call for a difference in textbooks in different schools is apparent if the kind of textbook in civil government for instance, required by a teacher of a class in a large city high school be compared with that required by the teacher in a small rural high school, who frequently finds that in addition to other subjects he must teach the civil government. The former, with large reference libraries at hand, both in school and city, with time to organize the work and take his class to study first hand the details of city and county government, wants a mere outline for the textbook and prefers that his pupils should not be prejudiced by arguments and conclusions drawn by an authority already adopted and accepted. The rural high school teacher, on the other hand, must have a book that will largely carry the subject, to which he can scarce give the time for recitation. A system that would permanently and certainly prohibit principals from having any possible voice in the selection of the tools their teachers must use, would doubtless be held in the same regard by them as a system by a superintendent of a manufactory that would permanently debar him from having any voice or power of recommendation of machines or tools that he sees will make for efficiency.

NARROWING INFLUENCE OF THE SINGLE TEXT.

It is as preposterous to demand that all high school teachers use the same text as it would be to demand that all carpenters use a Simonds or a Disston saw. Is there not the same reason for prescribing uniform apparatus in all the laboratory sciences; uniform tools in the industrial art courses; uniform equipment in all the commercial departments, and indeed, uniform articles in all general school supplies?

The courses and the textbooks must not only be chosen to suit the varying needs of the pupils and of the communities in which they live, and be adapted to the individuality of the teacher, if the highest efficiency is to be attained, but these textbooks must be selected in relation to the school equipment. This is true in all departments, particularly in the cultural subjects of history, English, economics, to say nothing of the laboratory courses, whether in the sciences, commercial work or other branches. How could a small high school, with few, if any books, use successfully a history text calling for a great deal of supplementary reading? Should the Los Angeles High School, on the other hand, with 8,100 volumes in its own library, be compelled to use a text without such a rich fund of supplementary materials? There would be a gross injustice in compelling all schools to follow the same course and to use the same laboratory texts or manuals in the sciences. The small high school would find it utterly impossible to purchase the apparatus and supplies required by the science courses as given in the Oakland Technical High School. It would be a greater injustice to limit the efficiency of the larger high schools by expecting them to conform to the same course requirements as some of the meagerly equipped schools of the state.

There are numerous subjects that are being newly taught in high schools such as economics—a study of the principles underlying the business world—in which crystallization by the long-time adoption of a single textbook would chloroform the subject. General science is everywhere coming in as necessary, it being only ordinary good sense to believe that young people should be made acquainted with the science of common things in this, an age of science. But the ventures at textbook making in this field have thus far been wholly inadequate. Even so formal a subject as algebra has recently received some lively and practical contributions to its list of textbooks. A most excellent textbook has just appeared, in which all algebraic formulae are derived from such ordinary surroundings as the sewing machine, the turning lathe, the traveling crane, and the more common machines of the shop, so that the subject is not a mere juggling of symbols. It will probably be the making of boys and girls where it is used by a teacher who understands and appreciates it, because it makes the best of algebra real and discards what can not be made real. Its successful introduction, however, can hardly come by fiat. The teacher must recognize in it a needed tool. Science preparatory for engineering is not the same as science for home economics courses. Science adapted to needs of girls is not necessarily the science needed by the boys. The agricultural and horticultural conditions in different parts of the state demand treatment in textbooks differing the one from the other.

Instances requiring difference of treatment impossible in case of state-wide adoption might be multiplied at length. ''Probably no one of all the thousands of high schools,'' say Strayer and Thorndike in their book on Educational Administration, page 175, ''is doing the best possible thing for education, but most of them would do worse than they now do if they all did do the very best possible thing for any one of them.''

It has been asked if there are not subjects in which there is practically no change. It has been suggested, for instance, that the Greek Epics of Homer are not liable to any violent changes in the general disturbances of modern life; that the Lady of the Lake is the same as when written; and so with the classic literatures of other languages. Would it not be advisable, we are asked, to make these uniform as to edition and perhaps print them at our state printing office even though the pupil must purchase his other textbooks? If such text as ''Lady of the Lake,'' for instance, were made uniform and free, other literature, no matter how much more practical or well adapted to the purpose in hand, requiring a textbook to be bought would be sidetracked. We should at once see the tendency to give only those subjects in which the book is free. Spanish would give place to Latin. Similar examples in other fields of educational endeavor come readily to mind.

UNIFORMITY A DANGEROUS ADVENTURE.

In our opinion, your committee would do well to consider carefully the likelihood of the state being able to command the best of the textbooks already written or to obtain for state use with any certainty the best of our local product. Your committee should also determine whether really successful textbooks can be written to order.

We believe that it is the business of the state, where possible, to protect its citizens against egregious and costly errors of judgment. Fortunately, in this case, it is not necessary to throttle initiative or hamper progress to do it. There is ample experience both outside and inside the state of California to draw upon. Many states and hundreds of cities have tried free textbooks. Their experience covers many years. There is no necessity for making any excursion into the sea of untried policies. We have a State Board of Education that was created to bring to us the light of the world's experience and keep in full touch with the real educational situation in California. They can keep the state from foolish and dangerous adventures, but only as the state through its organization consults them and listens to them. We are but a temporary committee of a voluntary organization. Without doubt we do, in this matter, represent the teachers of the state. The State Board of Education in a permanent and authoritative way represents not the teachers only, but the entire educational interests of this state. To the State Board of Education we refer your committee for any factors on either side of the question that we have overlooked or through unwitting prejudice have failed to state fairly.

Finally, we submit that a unified educational system does not involve uniformity. Unity of effort implies rational cooperation among factors differing as widely as the conditions that surround them. Uniformity means mechanical duplication, displaces reason, and stops progress.

Unity is the law of life. Uniformity is the rule of death.

Exhibit H.

THE CALIFORNIA TEXTBOOK PLAN.

By the Superintendent of Public Instruction.

What is known as the California Textbook System began when the legislature of 1883 submitted the Perry amendment to the constitution, providing for state publication of textbooks, in the following words:

> "Sec. 7. The governor, superintendent of public instruction, and the principals of the state normal schools, shall constitute the State Board of Education, and shall compile, or cause to be compiled, and adopt a uniform series of textbooks for use in the common schools throughout the state. The state board may cause such textbooks, when adopted, to be printed and published by the superintendent of state printing at the state printing office, and when so printed and published to be distributed and sold at the cost price of printing, publishing, and distributing the same. The textbooks so adopted shall continue in use not less than four years."

This was adopted by the people by an almost unanimous vote in November, 1884, and was followed by the necessary enabling legislation in 1885. By 1886 the state board had prepared and the State Printer had published four books, by use of an appropriation of $170,000, of which $20,000 was for compiling and $150,000 for plant, material and labor. The feeling of that time is interesting to observe as reported by W. T. Welcker, the superintendent of public instruction, in his report to the governor in 1886:

> "The opponents of this measure (the Perry amendment), although they were not successful, were able and fiercely zealous. It was indeed a novel experiment and a great departure from all known methods. In opposition it was urged that the State Board of Education would prove incompetent; that granting their ability to discharge their appropriate duties, this was a work of expertism of a rare and special kind; that the preparation of school textbooks was a trade in itself which required years of training in that particular business.
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> * * * * * * *
>
> "So much scandal has gathered about the supply of the public schools with textbooks, so many charges of corruption alleged to have been done by the book houses among school officers, school boards, and legislatures, that many persons would be well satisfied with textbooks published under the scheme now under consideration, even were they somewhat inferior in quality and more expensive in cost than those heretofore in use. But the cost of the books is one of the most gratifying things connected with the enterprise. The cost at Sacramento, as determined by the State Board of Education, of the books now furnished, is as follows:

CALIFORNIA STATE BOOKS IN 1886.

Speller and Word Analysis	20 cents
First Reader, 128 pages	15 cents
Second Reader, 228 pages	30 cents
Third Reader, 512 pages	40 cents

> "The series of readers, covering substantially the same ground as those heretofore in use, will cost 85 cents, while the price of Bancroft's is $2.60; McGuffey's is $2.50; Appleton's is $3.00; and Swinton's $3.05! The series of the state costs but little more than one-third of the price of the cheapest of the above!"

Two years later the legislature, upon the advice and request of the State Board of Education, made another appropriation of $165,000, $15,000 for compiling and $150,000 for plant, materials and labor, and authorized the publication of a number of additional books. Other appropriations were made for the state printing office from time to time in subsequent years, for machinery, buildings, etc., but it is not possible to divide the expense accurately between textbooks and other state printing.

FIRST PERIOD.

This gets us fairly into the first period of the California Textbook System, which may be called the period of state publication and local authorship. It continued from 1883 to 1903, or twenty years. It was a time of contention, strife and abuse, very disquieting to those who were responsible for the enterprise.

The newness of the scheme shocked people's minds and roused their antagonism. The mechanical difficulties to be overcome were innumerable. Some editions were badly bound. Some books were poorly written. Every teacher preferred to use some favorite textbooks, that he had been brought up on perhaps, and to be obliged to give these up for something else again made loud verbal explosions on every hand. There were hundreds of book dealers in the state who were cut out of the profits of retailing books, and they were frequently heard from. The great publishing houses had agents circulating in every part of the land, whose religion it was to everlastingly damn the whole idea of state publication.

The leading educators almost universally followed suit. Institutes, clubs and associations condemned it. No educational gathering was complete that did not take a fall out of the state textbooks. Never did any one have a good word to say of them in public. They were an impersonal sort of thing, like the weather, that any one could criticize and abuse without fear of unpleasant consequences. Doubtless, at this time, any books whatever that could have been printed by the state would have met the same fate. Yet it is worth remarking that the people of the state who do the voting in the legislature and at the polls have never failed to uphold the California plan by overwhelming majorities whenever an opportunity has come to them, even down to the present day.

However, those in charge of state publication became very uncomfortable over the general clamor. They revised the books and added to them in vain, and continually they looked for some way to improve the matter, to stop the howls. Undoubtedly, if it had not been planted deep in the constitution itself, state publication would have gone by the board during this period.

The close of the period found the state publishing fourteen textbooks, as shown in the following table:

CALIFORNIA STATE BOOKS IN 1903.

Name of book	Cost price at Sacramento
Revised First Reader	$0 16
Revised Second Reader	28
Revised Third Reader	44
Revised Fourth Reader	53
Speller	25
Primary Number Lessons	20
Advanced Arithmetic	42
Lessons in Language	25
Revised English Grammar	47
New U. S. History (Grammar School)	81
Elementary Geography	50
Advanced Geography	1 02
Physiology	50
Civil Government	46

These books were prepared under the general direction of the State Board of Education. As a matter of fact it was quite impossible for the busy and overworked men who composed the board (the superintendent of public instruction and the presidents of the state normal schools) to do the work of writing textbooks, so various plans were tried. W. L. Willis, a teacher and newspaper man of Sacramento, prepared the speller, which remained in use for twenty years. H. C. Kinne, a veteran teacher of San Francisco, offered a set of readers which were adapted to meet the ideas of the board. F. H. Clark, of the Los Angeles high school, was engaged to prepare a history. At least a dozen other teachers of the state were engaged in one way and another in the preparation of these earliest books. Among them were Wm. Carey Jones, Frank Morton, Volney Rattan, Geo. R. Kleeberger, Sarah P. Monk, Elizabeth Wilson, Ruth Royce and Cornelia Walker.

At last the actual work was placed upon an editor-in-chief, W. H. H. Raymond, with various expert assistants from time to time. Among these were Miss Anna C. Murphy, who is now Mrs. Edwin Markham, and Mrs. Mary W. George, who is now on the faculty of the San Jose State Normal School. This editorial board worked at the state capital in connection with the office of the superintendent.

SECOND PERIOD.

During the twenty year period four million books were made and sold to the people for a million and half of dollars.

During the administration of Governor H. H. Markham, while Thomas J. Kirk was superintendent and Tirey L. Ford attorney general, the law and the constitution were very carefully scrutinized to find some way out of the woods of general complaint. It was determined that, although the books themselves must be manufactured at the state printing office, there was nothing in the constitution that required local authorship, nothing to prevent the state board from leasing or buying copyrights and plates of books already published for the use of the State Printer.

This construction was hailed as a godsend. Thus could the teachers of the state have the very best books extant, from the most meritorious, successful and popular authors, selected in the open markets of the world, with the sky for a limit. The legislature of 1903 passed a new set of enabling laws, providing for the following plan:

A standing committee of the State Board of Education, composed of the Governor, the superintendent and a third member elected by the board shall have direct charge of the textbook business. This state textbook committee was given a secretary with a salary of $2,500, which was regarded as a wild extravagance at the time. Under the general direction of the board it should select books, lease plates, do all necessary editorial work, and report to the board. The books when printed should be sold to the children at cost as before. A textbook appropriation of $20,000 was made for the use of the textbook committee. About half of this was still on hand when free textbooks were adopted in 1913.

The new committee went to work enthusiastically. It had difficulty at first in getting the publishers to lease the plates of their successful books. They were chary of the scheme. Inertia was to be overcome. The first royalties were high, ranging from one-fourth to one-third the list price of the book. The American Book Company had the lion's share of the adoptions. D. C. Heath & Company, the Macmillan Company, Ginn & Company, were also represented, and later Silver, Burdett & Company, the World Book Company, and Newson & Company. This was the period of state publication and leased copyrights. It lasted from 1903 to 1913, or ten years. Public clamor somewhat died down. The book companies were ameliorated. The teachers had the same books as other people. The dealers had accepted the situation.

The chief storm center at this time was the cost of the books to the children, alleged to be caused by their frequent change. Of course, in changing the system, all the books were eventually changed, but the law requiring no change in less than four years, and no book contract for less than four years, was strictly adhered to. Several of the books had stood unchanged from a dozen to a score of years. However, it was found that when a book had been in use four years so many people were fighting it that it must needs be changed. During the latter part of this period determined efforts were made to lower the cost of the books. The publishers very generally entered into heated competition against each other and the royalties were reduced from about twenty per cent to about fifteen per cent of the list price. No headway, however, could be made in lowering the manufacturing cost. In general the price to the children was somewhat below the publishers' list price for the same book, and the book in most cases was specially adapted to California use by changes and supplements in the plates. The following table shows books, costs, royalties and prices at the close of the period:

CALIFORNIA STATE BOOKS IN 1913.

(Prices fixed March 3, 1912.)

Books	Cost of manufacture	Royalty	Cost price at Sacramento
Primer	$0 132	$0 048	$0 18
First Reader	122	048	17
Second Reader	1375	0525	19
Third Reader	19	06	25
Fourth Reader	21	09	30
Fifth Reader	21	09	30
Speller—Book I	145	025	17
Speller—Book II	145	025	17
First Book in Arithmetic	1775	0525	23
Advanced School Arithmetic	19	09	28
English Lessons*—Book I	1925	0675	26
English Lessons*—Book II	22	09	31
Introductory History	22	15	37
Brief School History	43	15	58
Introductory Geography	36	09	45
Advanced Geography	50	15	65
Civics	255	125	38
Writing—Book I	03	01	04
Writing—Book II	03	01	04
Writing—Book III	03	01	04
Writing*—Book IV	03	01	04
Writing*—Book V	03	01	04
Primer of Hygiene	15	06	21

The State Printer and the State Board of Education in fixing prices all these years had added to the actual cost a small percentage to build up a fund to repay the state its original outlay for the printing plant. At the end of the period this accumulated school book fund amounted to about $200,000. It was then added to the appropriations for free books, and expended for that purpose.

There were four successive secretaries of the state textbook committee: J. H. Strine, ex-superintendent of Los Angeles County; Robert W. Furlong, ex-superintendent of Marin County; George L. Sackett, ex-superintendent of Ventura County; and B. S. Lobdell, a long time agent of the publishing houses. The plan followed for adopting books and getting them to the children during this period was as follows:

> "The textbook committee has direct charge of all the textbook affairs, under direction of the board. When the contract for the plates of a textbook is about to expire, this committee invites bids from publishing houses for suitable books, renewing or substituting the contract.
>
> "Half a dozen or more expert teachers of the state are designated as readers, and paid about $25 each, to make a detailed study of all books offered in a given branch. The state board meets and considers the various books, giving opportunity for the agents of the books to present arguments, hearing the reports of the readers, and admitting any other testimony or opinion that may be offered. Then it chooses the book by ballot and instructs the textbook committee to make contract accordingly. The complete plates in duplicate are furnished to the State Printer by the publishing company gratis, all changes desired by the committee being incorporated.
>
> "The books are then manufactured in the state printing office and sold by the Superintendent of Public Instruction to the dealers and school officers of the state. The publishers are paid quarterly from the proceeds of the sales, so much royalty for each book sold. The prices are fixed by the State Board of Education annually upon the cost reports of the State Printer.
>
> * * * * * * *
>
> "Before a dealer can buy books from the state office he must sign an affidavit by which he agrees that he will not sell the books at a price higher than that fixed by the State Board of Education, and also that he will not sell the books to purchasers outside the state. Upon signing it, the dealer must forward it to his county superintendent of schools, who, in turn, must endorse it and forward it to the state office."

THIRD AND LAST PERIOD.

The third and last period may be called the time of state publication, leased copyrights, and free distribution. It extends from 1913 to the present time, or a little more than two years.

Free school books was not a new idea. Superintendent Ira G. Hoitt recommended it in his report to the Governor in 1888 as the cure for our textbook troubles, as follows:

> "The state of California has taken a step in the right direction in furnishing books of its own manufacture to the children at cost. It should, in my opinion, go one step farther and furnish the use of textbooks free to all children attending the public schools."

It had been proposed many times since, without hope or prospect of success, until the progressive idea began to free men's minds from precedent and convention. The administration of Governor Hiram W. Johnson took it up. The legislature of 1911 submitted to the people a constitutional amendment known as the Shanahan amendment, which came to vote in November, 1912, and despite the customary opposition was carried by a great majority. It read as follows:

> "SEC. 7. The legislature shall provide for the appointment or election of a state board of education, and said board shall provide, compile, or cause to be compiled and adopt a uniform series of textbooks for use in the day and evening elementary schools throughout the state. The state board may cause such textbooks, when adopted, to be printed and published by the superintendent of state printing, at the state printing office; and wherever and however such textbooks may be printed and published, they shall be furnished and distributed by the state free of cost or any charge whatever, to all children attending the day and evening elementary schools of the state, under such conditions as the legislature shall prescribe. The textbooks so adopted, shall continue in use not less than four years without any change or alteration whatsoever which will require or necessitate the furnishing of new books to such pupils."

It was the intention and expectation of all who had to do with this amendment that it would not go into effect until the beginning of a new fiscal year and after proper enabling legislation had been effected. Attorney General Webb, however, after taking some time for deliberation and investigation, rendered an official opinion stating:

> *First*—That the old State Board of Education and the textbook committee are abolished and there can not be a new plan until it is created by legislative action.
>
> *Second*—That the free textbooks should be furnished the schools at once, without waiting for enabling legislation or anything else.
>
> *Third*—That all of the functions of the state educational system devolved upon the Superintendent of Public Instruction, as the educational representative of the people.

Thus the superintendent faced one of the most extensive, complex and difficult tasks that ever came to any man, to furnish free textbooks by hundreds of thousands to the impatient schools and children of a great state; to do it without funds, without precedent, without previous plan, and at once. He went ahead as best he could. The state printer put his great plant to work day and night at fullest capacity. The legislature made some emergency appropriations. A scheme of distribution was devised that worked well and that has never been changed in principle since. The books went out in carload lots and reached every nook and corner of the state, in every desert, and mountain and plain, from Oregon to Mexico. The teachers of the state were very helpful and patient, making their first demands as light as possible, and when necessary doing without the books that were slow in making.

During this time the state printer was Friend Wm. Richardson, a practical newspaper man with a talent for organization. He was of great service to the state in the early days of the free textbook enterprise. By a careful cost finding system and rigid supervision of detail he substantially reduced the cost of manufacture time after time.

The new State Board of Education was organized in the fall of 1913. It was a lay board of seven members, appointed by the Governor and generously furnished with appropriations for remuneration, expenses, equipment and all the expert assistants and office helpers that it desires. Up to the present time it has made no changes in textbooks or in manner of handling them, but it is admirably adapted for investigating and wisely choosing books through its experts in future, and for handling the commercial and industrial problems that come up in connection with their production, distribution, and use. The whole thing is simply a matter of state enterprise. If it can be efficiently and honestly and economically administered it will be successful and a great blessing to the people. Otherwise—well, then it will be to the contrary!

The following table shows the books manufactured at the present time, July, 1915, with their cost and selling price to those who buy. Private schools like to buy the state books. A very few parents buy, so that their children can have duplicate books at home, or so that they can use individual books. Sometimes children buy to replace those they have themselves lost or destroyed. Books are not sold outside the state.

CALIFORNIA STATE BOOKS IN 1915.

Name of book	Cost and selling price at Sacramento
Primer	$0 15
First Reader	15
Second Reader	18
Third Reader	19
Fourth Reader	24
Fifth Reader	24
Speller—One	14
Speller—Two	14
First Arithmetic	18
Advanced Arithmetic	23
New English Lessons—One	23
New English Lessons—Two	26
Introductory History	31
Brief History	41
Introductory Geography	32
Advanced Geography	54
Hygiene	18
Civics	31
Writing Book—One	04
Writing Book—Two	04
Writing Book—Three	04
Writing Book—Four	04
Writing Book—Five	04

The following table will be of interest in this connection, showing the trade name of each of the California books with its publisher and the price at which it is delivered to the children by the publisher:

EQUIVALENT OF CALIFORNIA STATE BOOKS IN 1915.

Original name of book	Publisher	Publisher's list price
Aldine Primer	Newson & Co.	$0 32
Progressive Road to Reading	Silver, Burdett & Co.	32
Brooks Second Reader	American Book Co.	35
Brooks Third Reader	American Book Co.	40
Stepping Stones to Literature	Silver, Burdett & Co.	60
Chancellors Spellers—Book I	The Macmillan Co.	25
Chancellors Spellers—Book II	The Macmillan Co.	30
McClymonds & Jones El. Arithmetic	American Book Co.	35
McClymonds & Jones Essentials in Arith.	American Book Co.	60
Guide Books to English—Book I	Silver, Burdett & Co.	45
Guide Books to English—Book II	Silver, Burdett & Co.	60
Thomas Introductory History	D. C. Heath & Co.	65
McMasters Brief History of the U. S.	American Book Co.	1 00
Tarr & McMurrays Intro. Geography	The Macmillan Co.	60
Tarr & McMurrays Advanced Geography	The Macmillan Co.	1 00
Dunns Community and the Citizen	D. C. Heath & Co.	75
Spencer Sons Writing—Book I	American Book Co.	05
Spencer Sons Writing—Book II	American Book Co.	05
Spencer Sons Writing—Book III	American Book Co.	05
Spencer Sons Writing—Book IV	American Book Co.	05
Spencer Sons Writing—Book V	American Book Co.	05
Primer of Hygiene	World Book Company	40

It will be seen that the California prices are very much lower than those of the regular publishers. The comparison is not quite fair, perhaps, in that some of the overhead expense, as the salaries of some managers and editors, the cost of exploiting, the interest and depreciation of plant, the losses by unsuccessful books, is not included in reckoning the California costs. We believe, however, that the state is getting its service of textbooks at a saving of at least 25 per cent, everything considered, over what it would cost if given to private publishers in the regular way.

Certainly the state would not recede from or give up its textbook system under any circumstances. It is running more smoothly, giving more general satisfaction and meeting with less opposition than ever before in its history. The teachers find great comfort in being relieved of the task of badgering the children to buy books and in being able, for the most part, to start their classes all together fully equipped on the first day of the term. It is alleged by some that our books are not so well bound as those of private publishers. We find, however, that they last as long in actual use as any books.

The present method of adopting, making and distributing textbooks may be briefly sketched thus:

The preliminary investigation of the textbooks offered to the State Board of Education by publishers and authors for adoption is made by the three commissioners of education and the superintendent of public instruction. They spend some months in the study and are free to consult and to employ expert teachers actually at work in the schools of the state upon any phase of the examination in which they need help. Finally they report to the board. The board gives audience to the representatives of every book offered, questions them, listens to briefs, recommendations and all other testimony offered. It listens to the reports of the commissioners and the expert readers. At last the board makes choice and contracts for the use of the plates of the successful books for four or more years, at a certain royalty for each book distributed, stipulating any additions, changes or California supplements that may be desired at the expense of the publishers. The publisher furnishes the completed plates in duplicate to the state printer, who prints the books in 25,000 editions and turns them over to the warehouse, from which they are distributed to the schools upon the order of the superintendent of public instruction.

At the end of each year the teacher or principal sends in a requisition for the additional books she will need for the next year, accompanied by a list of the books she already has. In response, the books are sent out to the school clerks by the superintendent, with parcel post, express or freight rates prepaid by the state. Some shipments consist of half a dozen books by mail to a remote school on a mountain top; others are whole carloads to some city in the valley or by the sea. Later supplemental requisitions are filled when necessary. The necessity and the reasonableness of the demands are verified by requiring all the requisitions to be approved and signed by the clerk of the school and the county superintendent.

When the clerk receives the books for his school he turns them over to the teacher, principal or superintendent, who in turn distributes them to the children, keeps a record of them and is responsible for their care and preservation. Annual reports are made, showing the number of books on hand and their condition. At the end of the term the books are, or should be, collected, repaired, recovered, fumigated, ready for redistribution at the opening of the new term.

It is a most encouraging thing that the teachers have accepted the responsibility of the free textbooks wisely and moderately. No selfish grabbing for unreasonable supplies of books is apparent, and the books usually are carefully used. The cost for the first two and one-half years, including the original stocking up of the schools, was roughly half a million dollars. There are about 400,000 children in the schools, so the total cost per child per year is approximately fifty cents. This includes the expense of distribution, but does not include such additional or supplementary books as are purchased by the local schools. The law forbids requiring pupils to buy any books whatever. The cost in future seems likely to be about $200,000 per year, if the present policy is pursued.

A question for the future to settle is the matter of individual ownership of school books. Hygienically it would be preferable for a book never to be used by more than one child. Many people contend that a book once issued should belong to the individual child and never be passed on to another. So far, the state has not seen its way clear to throw away the service that still remains in many of the books after they have been once used, the value of which would range somewhere between fifty and one hundred thousand dollars per year, probably. It is possible that some plan may be evolved for issuing books in cheap pamphlet form, a week or a month at a time, to put in the children's hands for a while and then destroy.

The question of royalty is another interesting one for the future. The royalty at present is about 15 per cent of the list price of the books, or about 50 per cent of the cost of manufacture. Since the beginning of the plan for leasing copyrights the state has expended $530,756.11 for royalties, or something less than fifty thousand dollars per year. To the ordinary man it seems as if this great sum could be saved in future if the books were written by our own California teachers. It looks like velvet. However, there are two sides to the matter. As a matter of fact the books, in the past, cost quite as much under the local authorship plan as they have since under the leased copyright plan. It is possible that we could do better now, however, since we have more experience and improved conditions. Moreover, there is a law upon the statute books requiring texts made in California to be adopted when they are of equal merit and the same cost. But local authors have to be paid in one way or another, and the editorial work, the mechanical work of preparing the books for publication, has seemed in the past somehow to eat up the velvet. The royalty represents the author's compensation, the expense of preparing the plates, the cost of exploiting the book into a well-known and popular one that California would accept, the loss by unsuccessful books and the publishers' percentage of profit. There is room for quite a pretty argument as to whether or not the payment of royalty is the cheapest and best way to try our multitudes of textbooks in order to secure the successful and workable ones. Probably the future will see a course somewhere between the two extremes. Some books lend themselves well to local preparation and others are born, not made. It is well to leave the whole matter in an elastic form, ready to adapt to future ideas, for the future will bring changes no fewer than those of the past.

It is impossible to forecast the nature and the extent of those changes, however, and now that we have brought the thing up to date our task is done, and we may leave the future to take care of itself.

EDWARD HYATT.

Exhibit I.

[NORTH DAKOTA STATUTE.]

CHAPTER 145.

[S. B. No. 159—Rowe]

Providing Uniform Textbooks.

An act to provide uniformity of school textbooks in each of the common, independent and special school districts; to regulate the sale and price of same; to provide for selection, adoption, and contract by common school district boards and boards of education of independent and special school districts, and the sale of same through purchasing agents of such boards, or the purchase direct of such boards and sale at cost or loan free of expense to pupils.

Be it enacted by the Legislative Assembly of the State of North Dakota:

§ 1. Before any person, firm, company or corporation shall offer for selection, adoption, contract, sale or exchange any school textbook or book for use in the schools of the state of North Dakota, such person, firm, company or corporation shall comply with the following conditions:

1. File a copy of such school textbook or book for use in the schools of the state in the office of the state superintendent of public instruction with a sworn statement of the published list price; the lowest wholesale price; and the lowest exchange price; based upon three and five year contract periods, at which said school textbook or book is sold or exchanged for an old book in the same subject of like grade and kind but a different series, to any school board, school corporation, or school commission anywhere in the United States.

2. File with the state superintendent of public instruction, a bond running to the state of North Dakota, with a responsible surety company authorized to do business in the state of North Dakota as surety thereon in the penal sum to be determined by the state superintendent of public instruction but not less than two thousand dollars nor more than ten thousand dollars conditioned as follows:

(*a*) That any book listed in said statement and in any other statement subsequently filed by said person, firm, company or corporation shall be supplied by the publisher to any school district or any school corporation in the state of North Dakota at the price and terms contained in said statement.

(*b*) That such price and terms so filed are to be reduced automatically in North Dakota whenever reductions are made by the publisher elsewhere in the United States so that at no time shall any book so filed and listed be sold to district school boards, boards of education or to their authorized purchasing agents at a higher price than is received for such book by the publisher elsewhere in the United States.

(*c*) That all textbooks offered for sale, adoption, contract or exchange by the publisher in the state of North Dakota shall be equal in quality to those deposited in the office of the state superintendent of public instruction, as regards paper, binding, printing, illustrations, subject matter and all particulars that may affect the value of such textbooks.

(*d*) That in case an abridged or special edition of any book shall be prepared the person, firm, company, or corporation manufacturing the same shall sell such special edition to district school boards, boards of education of North Dakota or to their authorized purchasing agents at the same wholesale price at which the book is sold elsewhere.

(*e*) That no person, firm, company or corporation filing their books in North Dakota under the provisions of this act shall enter into any understanding, agreement or combination to control prices or restrict competition in the sale of school textbooks.

§ 2. Such bond shall be approved by the attorney general and upon such approval, said person, firm, company or corporation shall be licensed by the state superintendent of public instruction to sell the book or books so filed in the state of North Dakota.

§ 3. It shall be the duty of the state superintendent of public instruction to have printed and distributed to the clerks of district school boards, secretaries of boards of education of independent and special school districts and county superintendents of schools within six (6) months after this act takes effect, a complete list of books filed with his department, giving the prices and terms of same; and the state superintendent of public instruction shall have printed and distributed annually thereafter a supplementary list of textbooks with prices and terms filed during the year, and all books used in the public schools of the state of North Dakota may be selected, adopted and contracted for from said list by district school boards and boards of education, and books so designated and contracted for shall be used exclusively for three (3) or five (5) years, during which time such books shall not be changed; *provided, however,* this shall not prevent school boards from using other supplementary books.

§ 4. If in any case any person, firm, company or corporation, shall supply any district school board, board of education or purchasing agent of same, books inferior to the samples on file with the state superintendent of public instruction, or charge a higher price than was filed or than the same are sold for elsewhere in the United States, then it shall be the duty of the county superintendent on written complaint filed with him by the school board of such a district to inform the state superintendent of public instruction of the failure of said person, firm, company or corporation to comply with the terms of his filing. The state superintendent of public instruction shall thereupon notify the said person, firm, company or corporation of said complaint, and if said person, firm, company or corporation shall disregard the notification and fail to comply with the terms of agreement, filed with the state superintendent, then the bond of said person, firm, company or corporation shall be forfeited; and the attorney general shall upon written request of the state superintendent of public instruction proceed to collect the full amount of said bond.

§ 5. No person, firm, company or corporation shall secure or attempt to secure the adoption, selection, contract or sale of any school textbook in this state by rewarding or promising to reward any teacher in any school in the state. No person, firm, company or corporation shall offer or give emolument, money or any valuable thing, promise or work, or any other inducement to any teacher or school officer in any school district for any vote or promise of vote or for his influence for any school book to be used in this state; *provided,* that nothing in this section shall be construed to prevent any person, firm, company or corporation from giving, or any school officer or teacher from receiving a reasonable number of sample school books for examination with the view of obtaining information as to the textbook or series of books from which said officer shall give his vote; *provided, further,* that any school officer or teacher receiving for examination sample books, shall after such examination deliver such samples to the clerk of the school district and such books shall then become the property of the district.

§ 6. Boards of education and district school boards are hereby authorized and shall have the power to appoint agents or dealers to purchase, handle and sell the books which have been selected and contracted for, and it shall be unlawful for any dealer or for any purchasing agent of any school district to sell any books to pupils of the district listed with the state superintendent of public instruction as hereinbefore provided at a price to exceed 15 per cent advance on the net cost of the book as listed with the department of public instruction and as named in the contract with the school district; *provided,* that to the selling price as above determined be added the net cost of transportation.

§ 7. School districts are hereby authorized to purchase textbooks from the publisher at prices and terms listed with the state superintendent of public instruction and to sell said books to the pupils at said cost prices or at such prices as will include the cost of transportation and cost of handling.

District school boards and boards of education shall have the authority and are authorized to purchase all necessary books for indigent pupils and pay for the same out of the funds of the district and to loan same free of expense to such pupils. The district school board or board of education shall purchase all books necessary for the use of teacher in conducting the work in the schools of the district where such teachers are employed and such books shall be paid for out of the funds of the district and be held as the property of the district.

§ 8. When a family removes from a school district, where free textbooks are not provided, the school board of the district from which the family removes may purchase out of the funds of the district, the textbooks in actual use by the children of such family at a fair price based upon the cost of the books and upon the condition of same; the books so purchased may be resold to other children in said district.

§ 9. When the district school board or board of education of any district deems it advisable said board may provide for the free use of school textbooks by the pupils of their school or schools, or whenever five or more legal voters of a common school district or 10 per cent of the legal voters of a consolidated, special or independent school district shall petition the board to submit to such district the question of providing free textbooks to pupils attending such schools, it shall be the duty of such board to submit the same to the legal voters of such district. Such questions may be submitted to a special meeting or at any annual meeting provided fourteen days' notice is given thereof and by posting said notice on the school house or school houses of such district and in such other public place or places as the district school board or board of education deems advisable, and in all cases the notice of such meeting shall call attention to the fact that such question will be submitted, and in case of a majority of the legal voters of such district present and voting at such meeting are in favor of such free textbooks, it shall be the duty of the board to provide the same. All books purchased by school boards, as herein provided, shall be held as the property of the district and loaned to pupils of the district while pursuing a course of study therein, free of charge; but the school board shall hold such pupils responsible for any damage to, or loss of, or failure to return such books at the time and to the person that may be designated by the board of such district.

§ 10. Any person, firm, company or corporation violating any provision of this act shall on conviction thereof be punished by fine not to exceed five hundred dollars or by imprisonment not to exceed three months, or by both such fine and imprisonment at the discretion of the court.

§ 11. All acts or parts of acts inconsistent herewith are hereby repealed.

Approved, March 11, 1915.

Exhibit J.

[FROM U. S. BUREAU OF EDUCATION BULLETIN.]

Methods of distribution have been designated by law in some of the uniform textbook states but not in others. In general it may be said that publishers receiving contracts in any state are required to establish a state depository or county depositories. When a state depository is required, county selling agencies as a rule must be established. In practice it is customary for all firms receiving contracts in a state to unite in establishing a single state depository which handles all the state-adopted books for all of the firms. Often some already established business house is designated as a state depository. Each firm pays to the management of the depository a commission on sales. The depository contract provides that the depository shall maintain "absolute neutrality" between publishers whose books it distributes.

The formation of these depositories is purely a business arrangement for economy in management and efficiency in distribution, since in but few instances are the sales in any state of any single firm great enough to warrant the establishment of a separate depository to handle its business. In a few states where individual firms are doing an especially large business independent depositories have been established; in Georgia, for instance, two firms maintain their own depositories apart from the general depository.

The fact that publishers have united in establishing single state depositories has often been cited as evidence of a "book trust." Investigation, however, of the conduct of the depositories does not show any reason for a belief in the existence of such a trust.

Publishers distribute state-adopted books from state depositories in 21 of the 24 uniform textbook states: Alabama, Arizona, Florida, Georgia, Idaho, Kansas, Kentucky, Louisiana, Mississippi, Montana, Nevada, New Mexico, North Carolina, Oklahoma, Oregon, South Carolina, Tennessee, Texas, Utah, Virginia, and West Virginia. As already noted, certain cities and towns in these states are not required to use the state-adopted books. The states bind the publishers by contracts protected by bonds guaranteed by surety companies to have their books constantly on sale at the depositories at the prices fixed by the state boards of education or the school-book commissions, and also in one or more places in every county of the states. Publishers are either expressly required, as in North Carolina, to "maintain one or more joint state depositories at some convenient distributing point or points in the state," or are practically required to do so, as in Alabama, where they must establish one or more depositories subject to the approval of the state textbook commission. In some instances even the terms of discount, etc., are prescribed by the state board or by the commission, the depository, however, being required as stated, to maintain "absolute neutrality" between the publishers whose books it distributes.

For the convenience of the merchants and the school children of these states the publishers have, when a central depository has not been designated by the state board of education or state textbook commission, selected one or more merchants located at the most convenient points of distribution, railroad facilities being considered, to act as their general distributing agents. From these general depositories the local agencies obtain all the state-adopted books, thus saving time, trouble, and expense incident to ordering from different places in the state or from the many contracting publishers. This arrangement is manifestly in the interest of the selling agencies and the school children, allowing the agencies, as it does, to secure all the adopted books at a central point in their own state and the children to obtain their books at convenient places when they need them. Publishers are also required by the majority of the states working under the state-adoption plan to mail postpaid or to ship by express or freight to any person ordering, if his order is accompanied by cash, a single copy or any number of copies of the state books at state prices. A citizen has, therefore, the option of ordering from the central depository, the local dealer, or the publisher.

In order to insure the selling of books to school children at state prices, the publishers are sometimes required to stamp upon the back covers of the books which they furnish under their contracts both the retail and the exchange prices. It is made by law the duty of the county superintendent to report to the state superintendent of schools every case known to him of overcharge on the part of a merchant selling or exchanging at a price higher than the state contract price. Both the state authorities and the publishers have tried to work out a plan of selling state adopted books so that the books may be obtained easily and promptly by the local agents, so that school children may obtain the authorized books without delay when needed and so that books may be always obtained at the same place.

Exhibit K.

Official Report Showing Textbooks Used in October of the School Year 1915–16

(Individual Classics Are Not to Be Included in This Report.)

	Number schools	Number pupils
English—		
Grammar	34	4,111
Composition—Rhetoric	254	25,643
Myths	216	11,649
Heroic Ballads	174	9,444
English Literature (History)	187	5,465
American Literature (History)	69	1,530
Oral English and Debate	59	4,639
Oration and Argument	130	3,381
Selections of Poetry	214	15,063
Selections of Prose	50	3,555
Journalism	9	68
Latin—		
First Book	250	8,493
Grammar	164	4,776
Cæsar	242	5,016
Beginner's Composition	162	3,647
Cicero	140	1,081
Advanced Composition	116	1,542
Virgil	127	713
Other Texts	34	565
Greek—		
Grammar	8	76
Beginner's Greek	9	63
Anabasis	7	52
Iliad	5	22
Composition	5	62
French—		
Grammar	65	2,223
Beginner's French	60	1,516
Readers	50	1,474
Composition	33	891
German—		
Grammar	145	3,478
Beginner's German	145	3,148
Readers	159	3,532
Composition	91	1,282
Spanish—		
Grammar	144	6,187
Beginner's Spanish	128	5,098
Readers	135	5,746
Composition	89	2,626
History—		
Ancient	245	8,886
Medieval and Modern	242	6,339
English	135	2,382
American	256	8,432
General	8	307
Industrial	19	420
Civics	256	5,250
History Note Books	89	3,786
Economics	68	1,579
Sociology	4	85
Commercial—		
Bookkeeping	243	8,194
Shorthand Text	222	6,302
Speller	127	4,990
Law	131	1,374
Geography	87	799
Correspondence	97	3,665
Arithmetic	214	6,303
Accounting	24	425
Banking	16	292
Business Practice	26	481
Penmanship	104	3,981
Typewriting	188	6,772
Salesmanship	4	85
Advertising	4	76
Music Books	103	4,915
History of Art	9	480
Mechanical Drawing	38	565
Mathematics—		
Algebra, First Year	266	17,208
Algebra, Advanced	198	2,738
Geometry (Plane)	265	10,724
Geometry (Solid)	189	1,515
Trigonometry	170	1,032
Calculus	4	10
Higher Arithmetic	5	104
Mechanics	9	186
Science—		
Physics Text	225	4,178
Laboratory Manual	203	3,312
Chemistry Text	235	6,814
Laboratory Manual	205	5,536
Physical Geography Text	87	2,022
Laboratory Manual	61	944
Biology Text	51	1,390
Laboratory Manual	17	354
Botany Text	68	1,712
Laboratory Manual	24	350
Zoology Text	13	385
Laboratory Manual	3	47
Physiology Text	34	1,232
Laboratory Manual	7	366
Geology Text	7	126
Laboratory Manual	--------	--------
Domestic Science Texts	115	2,952
Household Arts Texts	50	1,588
Agriculture Texts	70	1,289
Manual Training Text	36	1,023
General Science	117	3,501
Other Subjects—		
Elocution	2	271
Dramatics	1	15
Psychology	2	52
Astronomy	2	85
Current History	1	22
Assaying and Cyanide	1	10
Mineralogy	1	11

Exhibit L.

KANSAS STATUTE.

The said state school book commission shall, as soon as, and when practicable, print, publish, or provide for the publication of a complete series of school textbooks, as hereinafter mentioned, for use in the public schools, including the high schools, in the state of Kansas. Also they shall provide, by adoption, under the provisions of the law, for such books of the hereinafter-mentioned series as they find it impossible or impracticable to print or publish. They may also write, select, compile, or cause to be written or compiled, or purchase the copyright or contract the right to publish all such books by the payment of an agreed royalty therefor. The said series of school textbooks shall consist of one spelling book, one primer, one each first, second, third, fourth, and fifth reader; one each, elementary and advanced arithmetic; one each, elementary and advanced geography; one each, elementary and advanced grammar; one each, elementary and advanced physiology and hygiene; a primary and an advanced history of the United States; a history of the state of Kansas; one civil government of the United States and of the state of Kansas; one elements of agriculture and stock raising; one system of penmanship; a graded system of drawing books; textbooks containing collections of masterpieces of American and English literature, for the fifth, sixth, seventh, and eighth grades; algebra (elementary and advanced); geometry (including both plane and solid); Latin grammar; Latin exercises; Cæsar; Cicero; Virgil; English composition; English history; English literature; ancient history; medieval and modern history; rhetoric; botany, chemistry; zoology; word analysis; geology; physical geography; complete texts in German and French (including exercises, grammar, readers, and classics); descriptive astronomy; and a bookkeeping text. Such books to be equal in subject matter, material, binding, and mechanical execution and approximately in size to the books named in sections 7318 and 7833 of the general statutes of Kansas of 1909. The said state school book commission may adopt, print, or publish, as in their opinion may be desirable or practicable, other textbooks in addition to the books enumerated above and may approve textbooks in subjects not enumerated above for special courses, to meet the needs and requirements of the courses of study prescribed for use in the public schools, including the high schools of the state; *provided,* that the state school book commission shall have authority to so vary the period of adoption for high school classics as to meet the college entrance requirements; *provided further,* that the state school book commission shall not contract with any person, company, or corporation for any of the books provided for in this act at a price in excess of the lowest price at which such book or books are sold for use in any other state, county, city, or district. The distribution of all textbooks adopted under the provisions of this section shall be according to the provisions of section 7820 of the general statutes of Kansas of 1909 except as relates to the 15 per cent commission, allowed in this act; *and provided further,* that any person, persons, company, or corporation who shall contract to furnish textbooks adopted under the provisions of section 1 of this act shall take up any textbooks previously in use and displaced by said adoption which may be offered to the contracting publishers or their agents within one year after the beginning of said contract and shall allow for such displaced books in exchange for new books in the same branch an amount not less than the highest amount allowed on the lowest price in any other state, county, city, or district, and which said amount shall be specifically set out in each bid. Said exchanged books to be returned to the publishers or their agents within one year after the beginning of said contract according to their direction and at the expense of said contracting publisher.

Exhibit M.

CALIFORNIA STATE BOARD OF EDUCATION.
OFFICE COMMISSIONER OF SECONDARY SCHOOLS.

SACRAMENTO, December 18, 1916.

MR. A. P. WILL,
Legislative Counsel Bureau,
Capitol Building, Sacramento, California.

DEAR SIR:

I am submitting herewith information concerning the number of pupils using each of the textbooks listed by the State Board of Education during the year 1915–1916.

This information was compiled at the request of the special committee of Senate and Assembly appointed to investigate the high school textbook situation.

The statistics given are as accurate as we can make them. In some instances pupils enrolled in a subject use no textbook; in other instances they use two or three; in consequence the total number of pupils reported as using the textbooks in algebra, for example, may not tally with the total number of pupils taking the subject.

Hoping that this information will be satisfactory, I am,

Very truly yours,

WILL C. WOOD,
Commissioner of Secondary Schools.

ALGEBRA.

Text	Pupils using
Hawkes-Luby-Touton	10,543
Wells-Hart	2,192
Wentworth-Smith	532
Slaught-Lennes	2,836
Wells	280
Cajori & Odell's Elementary Algebra	55
Brookman	16
Short-Elson	61
Stone-Millis	378
Young-Jackson, Elementary Algebra	60
Collins' Practical Algebra	100
Breslich	140
Milne	15
	17,208

GEOMETRY.

Wentworth-Smith, Plane and Solid Geometry	6,655
Shutt, Plane and Solid Geometry	353
Ford-Ammermann, Plane and Solid Geometry	853
Stone-Millis, Elementary Algebra	365
Wells, Geometry	246
Hart-Feldman, Plane and Solid Geometry	188
Wells-Hart	30
Beeman-Smith	298
Betz-Webb	1,039
Short-Ellson	36
Robbins	30
Slaught-Lennes	9
Wentworth	473
	10,575

HISTORY—American.

Muzzy	5,928
Hart, Essentials in American History	299
Channing, Students' History of the United States	357
West, American History and Government	571
James-Sanford, American History	441
McLaughlin, A History of the American Nation	61
Adams	9
Ashley, American History	465
Forman, A History of the United States	346
Montgomery	30
	8,507

HISTORY—Ancient.

Wolfson, Essentials in Ancient History	92
West, Ancient World (revised)	4,276
Botsford, History of the Ancient World	684
Myers, Ancient History	1,507
Goodspeed, A History of the Ancient World	63
Webster, Ancient History	1,466
Robinson-Beard, Outlines of European History	546
Ashley (both books)	138
Westermann	57
Morey	57
	8,886

HISTORY—Medieval and Modern.

Harding, New Medieval and Modern History	2,939
Myers, Medieval and Modern History	1,507
West, American History and Government	1,184
Robinson-Beard, Outlines of European History	354
Robinson	341
	6,325

HISTORY—English.

Cheyney, A Short History of England	1,995
Walker, Essentials in English History	140
Andrews, Short History of England	77
Thomas, History of England	12
West	30
	2,254

ENGLISH—Oration and Argument.

Text	Pupils using
Bradley's Orations and Arguments	1,174
Shurter, Masterpieces of Modern Oratory	1,414
Laycock-Spofford, Manual of Argumentation	35
Gardiner's, The Making of Arguments	130
McMillan	12
Denny, Duncan and McKinney	115
Webster	24
Fulton and Trueblood	21
Hall	57
Burke's Orations	126
Boardman's Modern American Speeches	176
Foster, Exposition and Argument	25
Pattee, Practical Argumentation	30
	3,339

ENGLISH—Grammar.

Allen, Review of English Grammar for Secondary Schools	1,169
Mead, English Language and Its Grammar	70
Kittredge-Farley, Advanced English Grammar	369
Buehler, Modern English Grammar	7
Harris-Gilbert	542
Scott-Buck, A Brief English Grammar	24
Clippinger	243
Brooks' Composition	338
Prince, Practical English Grammar	496
Wisely, An English Grammar	64
Hitchcock	740
Carpenter	49
	4,111

ENGLISH—Heroic Ballads.

Gayley-Flaherty, Poetry of the People	7,701
Armes, Old English Ballads	1,163
Withan	19
Palmer	53
Smith, Oral English for Secondary Schools	100
Seward, Narrative and Lyric Poems for Students	231
Kinard, Old English Ballads	177
	9,444

ENGLISH—Myths.

Gayley, Classic Myths	8,844
Guerber, Myths of Northern Lands	2,386
Palmer	21
Francillon	108
Gayley–Guerber	57
Long, American Literature	81
	11,497

ENGLISH—History of Literature.

Long, American Literature	3,962
Halleck (three books)	778
Pancoast-Shelly, First Book in English Literature	227
Gayley-Young	14
Mackenzie, History of English Literature	19
Tappan (three books)	108
Moody, Lovett and Boynton	22
Howe (two books)	7
Cranshaw	22
Newcomer-Andrews	13
Brooks, History of English Literature	153
Tisdel, Studies in Literature	67
Simon's American Literature	60
Johnson	12
	5,464

ENGLISH—American Literature (History).

Long, American Literature	393
Howe (two books)	33
Tappan (two books)	237
Newcomer-Andrews	28
Halleck (three books)	281
Pace's American Literature	311
Page, Chief American Poets	15
Pancoast, An Introduction to English Literature	59
Brooks, History of English Literature	33
Abernethy	109
Cairns, American Literature for Secondary Schools	31
	1,530

ENGLISH—Selections of Prose.

Text	Pupils using
Ashmun's Modern Prose and Poetry	2,326
Simon's American Literature	62
Emerson	13
Scribner's Stories from American Authors	37
Pocket American	62
Duncan, Beck & Graves, Prose Selections	629
Ashley	16
Snyder	25
Ruskin	14
Gayley-Young, English Poetry	163
Gateway Series	4
Rhys	126
Shurter, Masterpieces of Modern Oratory	140
	3,617

ENGLISH—Selections of Poetry.

Text	Pupils using
Gayley-Young, English Poetry, Its Principles and Progress	14,505
Syle, Milton to Tennyson	250
Sheffield, Old Testament Narrative	24
Gateway Series of English Classics	52
Page, Chief American Poets	85
Baldwin	27
Long, American Literature	50
Newcomer-Andrews	12
Riverside Series	19
Shakespeare	10
	15,034

COMPOSITION—Rhetoric.

Text	Pupils using
Lockwood-Emerson, Composition and Rhetoric	228
Scott-Denny, New Composition Rhetoric	1,840
Brooks (two books)	8,984
Wooley	1,825
Clippinger, Composition-Rhetoric	2,759
Brooks-Hubbard, Composition-Rhetoric	507
Briggs-McKinney, First Book of Composition	3,216
Davenport, A First Book in English	135
Kavana-Beatty, Composition and Rhetoric	50
Blaisdell	31
Gerrish-Cunningham, Practical English Composition	1,869
Hanson, English Composition	898
Kittredge-Farley, Advanced English Grammar	72
Hitchcock's (four books)	665
Canby-Opdycke, Elements of Composition	317
Gardner, Kittredge and Arnold, Manual of Composition	402
Thorndyke	4
	23,872

SCIENCE—Chemistry Laboratory Manual.

Text	Pupils using
Brownlee and others (two books)	1,088
McPherson-Henderson (two books)	921
Smith, Textbook of Elementary Chemistry	712
Newell (two books)	368
Whitmore, Combination Chemistry Manual	174
Morgan-Lyman, Elementary Textbook in Chemistry	2,045
Bradbury, Inductive and Elementary Chemistry	59
Kahlenberg-Hart, Chemistry and Its Relations to Daily Life	13
Hessler-Smith, Essentials of Chemistry	189
	5,569

SCIENCE—Chemistry Text.

Text	Pupils using
Brownlee and others, First Principles of Chemistry	1,965
McPherson-Henderson, Exercises in Chemistry	1,164
Smith, Laboratory Outline of Elementary Chemistry	1,193
Morgan-Lyman, Laboratory Manual in Chemistry	1,955
Newell, Laboratory Manual	383
Kahlenberg-Hart, Chemistry and Its Relations to Daily Life	13
Hessler-Smith, Essentials of Chemistry	43
Bradbury (two books)	93
	6,809

SCIENCE—Physics Text.

Text	Pupils using
Milliken-Gale, A First Course in Physics	1,874
Coleman (two books)	576
Black-Davis	1,337
Carhart-Chute (two books)	257
Tower-Smith-Turton, Principles of Physics	87
Hoadley, Essentials of Physics	43
	4,174

PHYSICS—Laboratory Manual.

Text	Pupils using
Coleman	1,424
Milliken-Gale-Bishop	392
Black-Davis	262
Cavanagh-Wescott-Twining	1,215
Carhart-Chute	34
Fuller-Brownlee	30
	3,357

SCIENCE—General.

Clark, & Laboratory Manual	903
Snyder	1,509
Rowell	196
Coldwell & Eichenbery	847
Hessler-Smith	55
	3,516

SCIENCE—Physical Geography.

Tarr, New Physical Geography	637
Arey-Bryant-Clendenin-Morrey, Physiography	1,001
Dryer, High School Geography	263
Salisbury-Barrows-Tower, Modern Geography	48
Fairbanks, Practical Physiography	32
Snyder	39
	2,020

SCIENCE—Physiology.

Eddy, Textbook in General Physiology and Anatomy	56
Hough-Sedgwick, Human Mechanism	873
Peabody	32
Conn-Buddington	71
Ritchie's Sanitation and Physiology	76
Davison, Human Body and Health	255
	1,233

SCIENCE—Domestic Texts.

Morris	18
Farmer	127
Snell	113
Williams and Fisher	165
Kinney-Cooley	1,403
Campbell	214
Lilly-Frick	82
Weid	27
Fullerton	16
Olsen	56
Bailey	30
Greer	2
Conley	18
Blanchard	6
Parloa	24
Rose	53
	2,356

COMMERCIAL—Law.

Richardson	48
Huffcutt	825
Gano	282
Nichols-Rogers	107
Whigam	56
Parkinson	68
	1,386

COMMERCIAL—Correspondence.

Practical Textbook Company	27
Hogan	181
Belding	131
Cody	96
Buhlig	1,976
Erskine	30
Davis & Lingham	359
Gregg	64
Smith & Mayne	59
So Relle	44
Altmier	597
Webber	12
International Correspondence	26
Marshall	9
	3,611

COMMERCIAL—Arithmetic.

Text	Pupils using
Van Tryle	2,609
Moore-Miner	2,526
Thurston	1,194
Schenck	27
Sweet	92
Lyons	88
Robinson	4
Smith	7
	6,507

COMMERCIAL—Typewriting.

Smith	162
Cutler-So Relle	1,947
Remington Company	81
Rational	297
So Relle	542
Barnes	325
Gregg	908
Eldridge	93
Underwood	18
Fuller	11
Fritz-Eldridge	1,936
Knox	29
Mosher	102
Van Sant	202
	6,653

COMMERICAL—Speller.

Osborn	83
So Relle	144
Eldridge	2,165
Mayne	285
Atwood	790
Gregg	161
Kimball	23
Marshall	221
Osborn & King	583
Daly	9
Chew	430
Miller	28
"Words"	49
So Relle & Ritt	30
Loomis	90
	5,091

COMMERCIAL—Bookkeeping.

Wm. Rogers	2,468
Moore-Miner	2,181
Baker	237
Rowe	1,403
Neal	362
Webber	764
M. M. B.	357
20th Century	47
Marshall	54
Pierce	30
G. M.	48
Palmer	25
So Relle & Ritt	55
Bliss	107
	8,138

COMMERCIAL—Penmanship.

Palmer	1,353
Zaner	1,608
Mills	585
Rodgers	272
American Penman	41
Business Journal	31
Zaner & Bloser	82
Lester	14
	3,986

LATIN—Grammar.

Bennett, Latin Grammar	1,716
Allen-Greenough, New Latin Grammar	2,825
Nutting	142
D'Ooge	32
Gunnison-Harley	10
Gildersleeve-Lodge, Latin Grammar	1
Collar-Daniell, First Latin Book	25
Greenough	66
	4,817

LATIN—First Book.

Text	Pupils using
Nutting (three books)	427
Moulton, Introductory Latin	840
D'Ooge	2,075
Smith (two books)	3,587
Mitchell, Elements of Latin	10
Bennett, First Year Latin	87
Pearson	271
Inglis-Prettyman, First Book in Latin	83
Tuell-Fowler, A First Latin Book	654
Kirtland-Rogers, Introduction to Latin	78
Gunnison-Harley	96
Collar-Daniell	254
	7,615

LATIN—Composition.

Text	Pupils using
Pearson, Prose Composition	177
Baker-Inglis, High School Course in Latin Composition	1,368
Bennett	166
Nutting, Exercises in Latin Composition	8
Rolfe-Dennison, Junior Latin Book	7
Daniell, A New Latin Composition	39
Gunnison-Harley	75
Allen-Phillips, Latin Composition	131
Barss, Writing Latin	54
Daniell-Brown	61
Jones	1
D'Ooge	1,368
	3,455

LATIN—Cæsar.

Text	Pupils using
Allen-Greenough, New Cæsar	651
Gunnison-Harley, Gallic War	850
Greenough-D'Ooge and Daniell, Second Latin Book	1,036
Walker, Cæsar's Gallic War	348
Towle-Jenks, Cæsar: Gallic War	1,101
Miller-Beeson, Second Latin Book	143
Bennett	71
Mather	37
Roberts-Rolfe	47
Rolfe-Dennison, Junior Latin Book	787
Kelsey, Cæsar: Gallic War	32
	4,960

SPANISH—Readers.

Text	Pupils using
Bransby, A Spanish Reader	253
Harrison, Spanish Commercial Reader	2,894
Worman, Second Spanish Book	1,899
Carrion-Asa, Zaragueta	44
Hill, Tales for Beginners	72
Whentoff	12
Turrell, Spanish Reader	64
Cortina	158
Dowling	20
Bonilla	74
Alarcon	29
Padre Isla	7
Marion-Garennes	187
Giese-Cool	28
Wagner	63
	5,775

SPANISH—Composition.

Text	Pupils using
Umphrey, Spanish Prose Composition	1,492
Crawford, Spanish Composition	944
Loiseaux, Spanish Composition	61
Harrison, Spanish Correspondence	30
Remy, Spanish Composition	38
	2,626

SPANISH—Grammar.

Text	Pupils using
Garennes	149
Hill	2,294
Garner, Spanish Grammar	25
Olmstead-Gordon, Spanish Grammar	599
Coester	2,212
DeVitis' Spanish Grammar	359
Giese, A First Book in Spanish	24
Worman	9
Marion-Garennes	46
Wagner	214
Mousanto-Languellier, Practical Spanish Course	172
Ingraham-Edgren	200
	6,303

SPANISH—Beginners.

Text	Pupils using
Worman	2,194
Olmstead-Gordon	76
Garennes	978
Hill	32
de Whentoff	24
Dowling	902
Harrison	347
Marion-Garennes	572
Giese	24
Bransby	358
	5,075

FRENCH—Composition.

Francois, Introductory Prose Composition	495
Koren, Exercises in French Composition	27
Kimball	83
Lazare, Premieres Lectures	10
Carter	39
Grandgent, French Composition	19
Bouvet, Syntax and Composition	10
Comfort, Exercises in French Composition	76
	891

FRENCH—Readers.

Talbot, La Francais et sa Patrie	31
Aldrich-Foster	310
Super, Preparatory French Reader	9
Snow-Lebon, Easy French	17
Joynes, Contes de Fies	3
Manet	12
Lazare, Premieres Lectures	192
Syms	20
Chardenal, Complete French Course	17
Morneaux	44
Guerber	97
Bruno	92
David, Chez Nous	50
Bruce	14
Heath	11
Francois-Giroud, Simple French	96
Weill (two books)	10
Ballard, Oral French	420
Dumas	14
	1,449

FRENCH—Beginners.

Fraser-Squair, Elementary French	541
Worman	5
Super	13
Snow-Lebon	93
Howard	51
Labiche	7
Ballard	369
Aldrich-Foster	8
Maloubier and Moore, First Book	71
Lazare	12
Francois	29
Bruce, Lectures Faciles	66
Dupres	6
Chardenal, Complete French Course	226
Krause	25
	1,522

FRENCH—Grammar.

Fraser-Squair	1,474
Chardenal	628
Francois	64
Aldrich	27
Walter-Ballard	6
Howard	24
	2,223

GERMAN—Composition.

Text	Pupils using
Wesselhoeft (two books)	76
Harris, Selections for German Composition	93
Allen, First German Composition	196
Pope (two books)	267
Bernhardt, German Composition	106
Bacon	337
Boetzinger	32
Truscott-Smith	5
Chiles	66
Mineley-Allen	6
Whitney-Stroebe	59
	1,282

GERMAN—Reader.

Muller-Wenckbach, Gluck Auf	1,057
Holzwarth, Gruss aus Deutschland	263
Carruth, A German Reader	19
Gronow	159
Worman (two books)	23
Manlee	1,215
Spanhoofd, Erstes Lesebuch	229
Walter Krause, German Reader	480
Allen, First German Composition	29
Guerber	143
Martini, First German Reader	39
Hewett	43
Geschichten und Marchen	84
Gerstacher	6
	3,783

GERMAN—Beginners.

Thomas, A Practical German Grammar	276
Spanhoofd (two books)	1,821
Bacon	505
Bagster-Collins	86
Joynes-Meissner, German Grammar	46
Gohdes und Buschek	71
Bernstorff	83
Bierwirth	49
Gronow	9
Vander Smissen	116
Worman	8
Vos	8
	3,478

GERMAN—Beginners.

Krause	596
Spanhoofd	1,616
Bacon	404
Bagster-Collins	74
Guerber	14
Hempl	6
Heinze	61
Holzwarth	10
Gronow-Jung, Deutschland	98
Worman	11
Allyn and Bacon	2
Collar, First Book	2
Bierwirth	32
Muller-Wenckbach	29
Vos	6
Joynes-Meissner	20
Mosher-Jenny	29
	3,010

Exhibit N.

[CONCLUSIONS OF ONTARIO COMMISSION.]

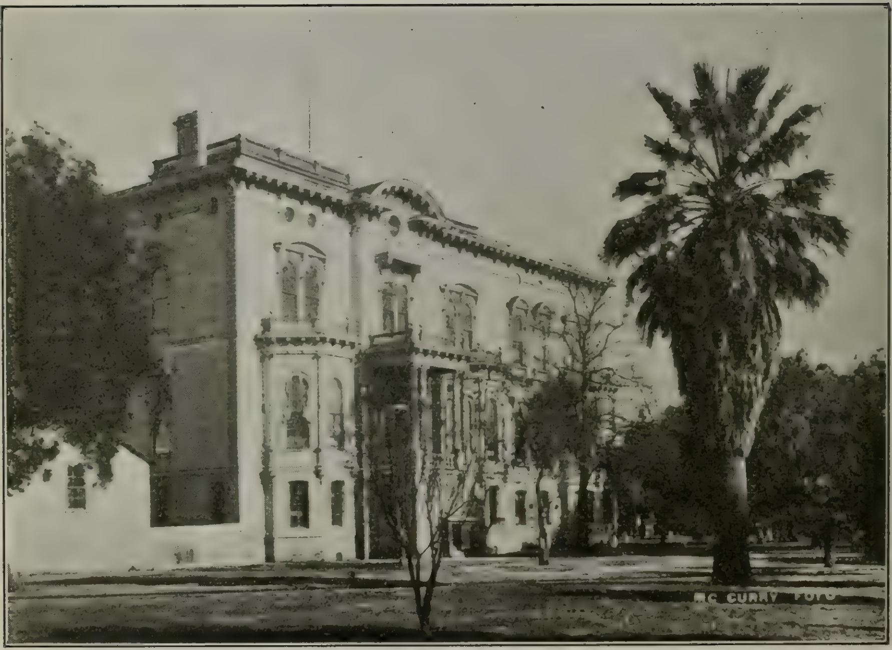
The list of books authorized for high schools and collegiate institutes is unnecessarily large owing chiefly to there being more than one book authorized in a subject. In the authorized list there are two reading books, three books on composition, two on geography, two on British history, two on Canadian history, two on arithmetic, two on algebra, three on geometry, three in Latin, and two on bookkeeping. The method and matter to be taught has, surely long before this, become pretty well defined, and could be contained in one book of moderate size. Cheapness of production is almost out of the question when two or three books are authorized in a subject and produced by different publishers. Again, it often occurs that a pupil moves from one high school to another, and is compelled to buy new books to enable him to take up the work with the class. * * * * *

The price of nearly all high school books is too high, and could be materially reduced and still allow a fair profit to the publisher.

There is a heavy expenditure by pupils of high schools and continuation classes for annotated texts in English Literature, Latin, Greek, French and German. The texts prescribed are usually padded by notes and other matter, causing the pupils to pay from 50 cents to $1.25 for selections that should cost less than one-third of those sums.

Enterprising publishers manufacture blank books with specially ruled lines to suit certain subjects at too great an advance on the price of ordinary foolscap paper.

Some means should be devised by the Education Department to prohibit the use of these blank forms. The pupil might do his own ruling on foolscap paper for all school exercises necessitating the use of blank forms.



CALIFORNIA STATE PRINTING OFFICE BUILDING,
Situated Northeast Corner Capitol Grounds.

REPORT

OF

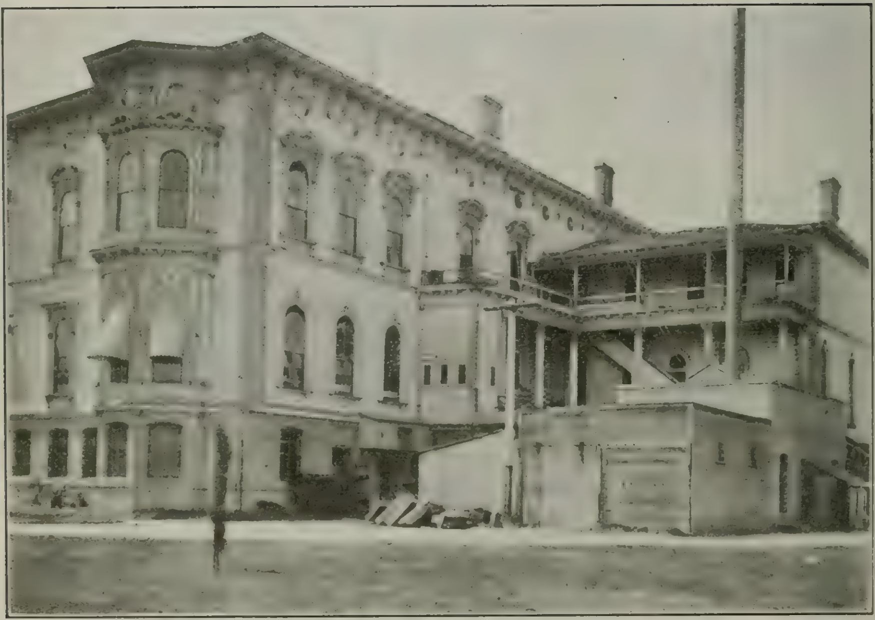
ROBERT L. TELFER

Superintendent of State Printing

FOR THE

Sixty-sixth and Sixty-seventh Fiscal Years
July 1, 1914, to June 30, 1916

CALIFORNIA STATE PRINTING OFFICE
SACRAMENTO
1916



CALIFORNIA STATE PRINTING OFFICE BUILDING,
Erected as a Governor's Mansion in 1870. Equipped as a Printing Office in 1875.

DEPARTMENT OF STATE PRINTING.

Report of the Sixty-sixth and Sixty-seventh Years, 1914-15 and 1915-16.

SACRAMENTO, CALIFORNIA.
November 1, 1916.

To His Excellency, HIRAM W. JOHNSON,
Governor of California.

SIR: I have the honor to submit, herewith, the biennial report of the State Printing Office for the sixty-sixth and sixty-seventh fiscal years, commencing July 1, 1914, and ending June 30, 1916.

The record of the department for the past two years, in economy and efficiency, will compare favorably with competitive commercial costs, not alone in the publishing of textbooks, but in its greater output of departmental printing.

The costs in textbook printing have been kept within the figures set two years ago, notwithstanding advanced prices of material not included in annual contracts, and limited issues where text changes were contemplated. The new group of textbooks numbers twenty-nine instead of twenty-three in the series, including three additional readers and three writing books.

In regard to our cost of producing textbooks and the cost-accounting system, I believe I can say with pardonable pride, that it has withstood a most rigid investigation. Several months ago, an expert accountant of national reputation, representing Eastern publishing companies, spent some time going over our records. His report was commendatory of both our system and management of the plant.

For the first time in many years a number of the school books have been of entirely home production. The composition of the three new readers was entirely handled within the plant instead of using royalty plates. This work, we are confident, will compare favorably with any books printed from electrotypes made in the East. The new primer, first and second readers were printed with two and three color plates, and upon heavier paper to withstand the wear given by children in the lower grades. All the other texts, as new editions are issued, are being printed upon larger sheets.

While the color plates in these books doubled and tripled the amount of presswork necessary, the cost has been kept very close to former prices. The new sixth, seventh and eighth readers, and the new history, are correspondingly low in cost. Aside from the six new books added to the series, we have printed the state constitution, teacher's manual and California history supplement for the elementary schools.

The success of California in printing her own elementary school books has led me to believe that the state should also include those for the high schools. During the 1915 session of the legislature there was appointed, at the request of this department, a Committee upon Investigation of High School Book Printing, and its recommendations will be made to the next legislature. In another section of this report I have given some of my reasons why I believe such printing to be both feasible and economical.

With considerable concern I note the large expenditure annually by school districts upon "supplemental" textbooks. In the last year nearly $100,000 was spent for this purpose throughout the state. Some legislation would be wise, I believe, to curtail this extravagance. If more or larger books are needed in the schools than the state series supplies, they should be included with the regular texts, state printed and distributed under the same economical system.

In comparing our costs of production upon the greater part of our output, general printing for the state offices, we have been commended by the various departments. Particularly in handling of their reports, bulletins, etc., have we been able to work cooperatively with them to economical and harmonious advantage.

While section 538 of the Political Code states that all state printing shall be done in the State Printing Office, we have conducted the plant on a competitive basis of comparison. Estimates upon work are given when requested, and our costs are necessarily kept down to a minimum. I believe that, on the whole, our prices and product are a credit to a publicly-owned manufacturing enterprise.

We note the introduction of a number of separate printing plants in the state penal institutions, schools and other departments. We would point out that centralization of this work and volume mean economy in state printing.

We have advantages, in the conduct of a state institution, and have disadvantages that more than counterbalance these. The wages paid, though none too high, are slightly better than the general average. Our vacation period of fifteen working days annually adds five per cent to costs, and sick leaves, which we have only been able to grant to a limited extent thus far, add to our cost of production. The payment of full wages, less the small army stipend, has been granted to four of our men who enlisted. With these and other similar expenditures, the state has proven the theory of reasonable costs in production and humanitarian employment.

Unfortunately, the employees of the State Printing Office can not be included under the social insurance plans, with sick benefits granted, without material increase in our costs. The commission is now working with us to devise some method of providing for benefits similar to those accruing to other state employees. The men and women in this department are more directly interested in a pension system, if such a plan is formulated by the commission, and are very willing to aid such a plan by mutual payments.

Though possibly it may not come properly within a financial report, I submit my belief that the state (and government) should in the near future, arrange its wage payment plan upon a sliding scale, based upon the high and increased cost of living. Comparatively, the wage paid today is considerably less than that of a few years ago, and though we can not pay a greatly advanced wage and remain in the competitive field, the government should, I believe, lead in this regard.

The increased and increasing cost of material, particularly paper stock, is a factor to be faced, not alone by the State Printing Office, but by every printing concern. This advance is due, primarily, to the European war, but also, I believe, to the collusion of the paper mills, particularly of the east, where most of the stock is produced. I am glad to note that congress is making an investigation of print or news paper, and trust that its investigations will include those grades used in commercial printing shops.

The greatly increased cost of stock has made it seem the wisest course for this department, in conjunction with the Board of Control and purchasing department, to make contracts extending for periods of three months. The present condition of the market makes it impossible for the dealers to quote us prices for a year, and our funds are insufficient to purchase a full year's supply at one time, even were such a course advisable or the most profitable.

Necessarily, with much old equipment in the plant, we have been forced to conduct our own repair shop, and also to add new equipment at various periods. This cost has been borne almost entirely in our overhead, and legislative appropriations only asked for such equipment necessary to handle the session's rush and voluminous work. A number of changes and improvements have been made in the plant, noted elsewhere, increasing the output and benefiting the employees.

The budget for this department, with exception of that pertaining to a new building, is less than it has ever previously been. Both contingent and printing funds have been eliminated and the machinery appropriation has been reduced to a minimum.

No appropriation was made last session for a State Blue Book, and if an issue is desired by the next legislature, I will recommend a condensed form at considerable less expenditure.

The life of printing equipment is usually fifteen to twenty years, when it is either worn out or obsolete. While appropriations asked of the legislature in recent years have been less than 2½ per cent of the annual business, and will be lower this coming session, we have borne the additional cost in our overhead and repair department. At 5 per cent margin added to our production cost would make the department independent of legislative appropriations.

Beginning with the forty-first session the legislative bill room was placed under the jurisdiction of the Superintendent of State Printing, and its operation and economical handling, compared with former expense, have, we believe, proved eminently satisfactory. Under the present management a filing system is maintained, from which copies of all bills, resolutions, amendments, etc., submitted at the last session of the legislature may be obtained. From the demands for documents of this nature it is apparent that the accessibility of this department is appreciated by a large number of the state's citizens.

In handling the document mailing of the bill room, and to give to the public an opportunity of noting all proposed and enacted legislation, file covers were placed in ten to fifteen prominent places in each legislative district, including newspapers, libraries, chambers of commerce, etc. Bills, amendments, etc., were promptly forwarded to these points, and requests filled from other sources. Of the sum of $7,500 appropriated for this purpose, $5,500 remains unexpended.

The need of a new building is apparent, both from the standpoint of production and that of safety to employees. The building now occupied was built in the year 1870, and aside from its unsightly appearance and poor arrangement, is a fire trap endangering the lives of employees and a risk upon valuable equipment. It was not intended for the work of a manufacturing plant. The cost to the state for a new structure would be less than the annual savings made by the State Printing Office on its production, and I believe we are justified in asking the next legislature for an appropriation sufficient to erect a modern building.

In presenting this report I wish to mention the cooperative and harmonious relations between the management and the employees of the State Printing Office. To Deputy D. D. Sullivan; John M. Welsh, foreman; J. W. Bowman, in charge of composing room; J. C. Gilkerson, accountant; Robert Alexander and A. R. Hopkins is much of the credit due for whatever success this department may have attained in the past two years.

IMPROVEMENTS MADE IN PRINTING PLANT.

In the matter of plant improvements during the past year the following may be mentioned:

The metal melting and refining department has been moved from the third to the ground floor and so located that considerable expense has been eliminated in transporting metal from composing room to refinery, a metal chute having been installed directly connecting composing room with furnace. The change greatly lessens danger from fire, the department having been moved from the main building to an adjoining cement-floored structure, eliminating lead fumes and removing over fifty tons of metal from the unstable third floor.

The department has at this time about ninety tons of first-class linotype metal. Through competitive bids and after several tests and analyses, the purchases were made from time to time at an average price of about 7½ cents per pound. This ninety tons of metal is to-day worth 15 cents per pound, and is still increasing in price. The appreciation of this metal amounts to about $13,500.

An air ventilating system has been installed in the composing room, operated by a small motor, which carries all metal fumes from the linotypes, insuring at all times an ample supply of pure, fresh air. This improvement makes the composing room as healthful as any, and more so than most plants, to be found on the Pacific coast.

The supply of river water for drinking purposes has been made healthful by the installation in each department of latest improved filters. Individual drinking cups are used in all departments.

Safety appliances have been installed on practically every piece of machinery in the plant where possibility of accident to employees existed. During the past year only seven accidents have occurred, all of minor importance. The loss of time, professional service and medicine amounted to only .00051 of the pay roll, or $109.30. This showing, we believe, will compare favorably with any manufacturing establishment employing on an average the year around, 140 employees, a very large percentage of them being machine attendants.

Nepotism or the favoring and employing of relatives in this department has been discouraged.

A general overhauling of the building has been made, and as far as possible defective timbers have been removed and replaced with new. Numerous weak spots in the structure have been braced, and every precaution taken to insure safety from accident to employees.

The fire escape has been strengthened and some modern equipment added. Alarm bells have been installed and fire drills are held at intervals.

Through legislative appropriation the entire building and school book warehouse have been repainted with two coats, inside and out. This not only helps to preserve the buildings from the elements, but adds considerably to their appearance. The application of paint and calcimine to every room and hallway of the composing room, bindery and pressroom, has greatly lightened these rooms, increasing the output and adding cheerfulness.

An oil-burning heating apparatus has taken the place of a coal-burning furnace, and has proven an economical investment. The new system is operated at considerably less cost for fuel and attendants, and is much more satisfactory as to heat regulation.

An addition has been made to the paper warehouse, giving much better storage facilities for paper and bindery stock, and facilitating handling of the same.

The installation of a small automatic elevator between stock and job rooms has facilitated work between these departments.

The installation of a complete rubber stamp outfit is proving not only a good investment but a great accommodation to all state departments.

Each state department has been furnished with a sample paper stock book with comparative prices, from which economical selections can be made.

A general rounding up of discarded and obsolete machinery and material has been made and same offered for sale. The first lot sold will bring about $900 to the department. A second offering of the remainder will be made, which should bring several hundred dollars more.

A dross refining furnace has been installed at no great expense by which the metal cleaning and refining loss in dross has been reduced to a minimum. The operation of this machine for a period of a year will effect a noticeable saving in the expense of purchasing and mixing toning metal.

An auto delivery truck has been purchased, same displacing a horse and delivery wagon. This change has effected a considerable saving, and at the same time given much better satisfaction to the state departments through prompt delivery.

A rearrangement of machinery and equipment in composing room and bindery has resulted in the elimination of much ''lost motion,'' or needless steps. Principally through this rearrangement, and the selection of capable heads of departments, the capacity of school book production has been increased from an average of 4,860 to 5,760 per day, with little or no increase in expense.

An acknowledged improvement in binding and presswork on school books has been brought about by the purchase of several pieces of machinery, and the placing of same in the hands of experienced operators, under the direction of capable foremen. During the present year several changes in school book texts have been made, including the addition of three writing books and three readers.

An appropriation of $15,000 was made by the forty-first legislature for the purchase of needed machinery. The whole of this amount has been expended, together with about $2,500 from our overhead fund. The increased capacity of the plant, and the general lowering of cost has proven the wisdom of this action, and the state at this time has the most up-to-date, best equipped plant in the history of its existence.

The department has substituted corrugated strawboard shipping boxes for heavy wooden cases in its shipping section, effecting a saving of fully 50 per cent in box-making and transportation. This saving accrues principally to the school book department, but at the same time it is being appreciably felt in the handling of departmental work.

A change in the time-keeping system has been evolved and put into use which reduces the expense and simplifies this branch of work.

A system of stock accounting has been installed, whereby all stock purchases are entered as received, and from which deductions are daily made. From this record the amount of stock on hand of any particular description may be instantly ascertained.

Wherever possible prompt payment of indebtedness is being made, and a considerable saving in discounts, particularly on stock and equipment, is to be noted.

The forty-first legislature abolished the contingent fund formerly provided for this department. Such charges as were formerly paid from this fund are now taken care of through the overhead fund. All possible care is exercised to reduce to a minimum expenses and charges of this nature.

A change in payment of salaries and wages of employees from monthly to semimonthly periods has been greatly appreciated by employees, as also the extension of annual vacations from twelve to fifteen days per annum. At this time a plan is being worked out having as its object the payment of a percentage of wages to employees unable to perform their regular duties through sickness. It seems that a satisfactory conclusion may be reached by basing the amount of benefits to be paid on length of service of the beneficiary.

A revolving emergency fund has been created, from which extra employees working limited periods or those leaving the service are paid, thus doing away with a wait of possibly ten or twelve days for wages due. Other small emergency liabilities are also handled through this fund, and its operation has proven very satisfactory to all concerned.

In addition to the legislative bill room a filing system, containing copies of all state department reports, has been installed in the State Printing Department offices in the Capitol Building, and is proving of value to state officials, newspaper representatives and citizens generally.

SIXTY-SIXTH FISCAL YEAR.

July 1, 1914 to June 30, 1915.

STATEMENT OF RESOURCES.

June 30, 1915.

Cash (Printing Fund)	$44,972 95	
Cash (Contingent Fund)	537 87	
Accounts receivable	46,305 79	
Labor and material on work in hand	24,904 23	
Inventory, paper stock	40,950 07	
Inventory, bindery stock	16,146 35	
Inventory, press room stock	153 92	
Total		$173,971 18

Liabilities, June 30, 1915.

Accounts payable	$15,180 40	
Accounts payable (pay roll)	9,238 95	
Payment in advance on stock, work to be completed later	1,038 11	
Paper owned by Board of Education	20,573 09	
Total		46,030 55
Net resources		$127,940 63

RECEIPTS.

Fiscal Year 1914-1915.

Appropriation—Salary of Superintendent		$5,000 00
Salary of deputy		2,393 35
Printing for office of Superintendent		363 19
Contingent		1,194 69
Sales—Old equipment, etc.		76 00
Scrap paper		703 08
Waste paper on jobs		163 87
Dross		65 91
Gold leaf		152 67
Manufactured school books and warehouse		62,573 20
Manufactured state work, old account		31,416 50
Manufactured state work, current account		251,578 05
By credit to Highway Commission		18 80
Appropriation—Premium, state officers		25 00
Equipment of Bill Room (Chap. 6-1909)		815 44
Credit sales—Root, Neilson & Co., old iron	$50 54	
Less labor, breaking up	9 20	
Net		41 34
American Type Founders Company, old type, etc.		541 16
American Type Founders Company, old folding machine		100 00
American Type Founders Company, type returned		5 10
Keystone Type Foundry, old presses		250 00
Total		$357,477 35

COST FOR OPERATING PRINTING DEPARTMENT.

Fiscal Year 1914-1915.

Salary of Superintendent of State Printing		$5,000 00
Salary of deputy		2,393 35
Printing for office of Superintendent		363 19
Contingent Fund—Postage	$545 25	
Laundry	32 00	
Travel	19 45	
Box at post office	20 00	
Telegrams	18 48	
Press clippings	48 00	
Survey of building	15 91	
Equipment—Paging machine	277 50	
220-volt motor	56 40	
8 x 12 C. P. press	161 70	
		1,194 69
Bond of Superintendent		25 00
Equipment of Bill Room (Chap. 6-1909)		815 44
Stores accounts—Paper stock		117,168 31
Bindery stock		13,348 06
Press stock		1,367 55
Items of expense, cuts, etc., charged direct to jobs		9,445 64
Operating Bill Room for Legislature		5,974 62
Operating shipping warehouse for Textbook Committee		3,621 72
Cost of labor and other items of expense incident to manufacturing printing, also minor additions to equipment		231,940 19
Total		$392,657 76

MONTHLY PAY ROLL.

Sixty-sixth Fiscal Year, 1914-1915.

July, 1914	$15,454 95
August, 1914	15,015 95
September, 1914	17,825 05
October, 1914	15,537 80
November, 1914	12,679 25
December, 1914	15,546 30
January, 1915	24,181 70
February, 1915	21,237 15
March, 1915	23,964 80
April, 1915	26,927 45
May, 1915	20,564 15
June, 1915	16,484 75
Total	$225,419 30

The months of January to May include the pay roll for legislative work and Bill Room.

PURCHASE OF EQUIPMENT.

Fiscal Year 1914-1915.

One Marchant calculating machine, No. 1249		$200 00
One Toledo computing scale, No. 682		150 00
One 12-inch oscillating electric fan	$17 50	
One 12-inch straight electric fan	14 00	
		31 50
One ½-horsepower 550-volt motor	$40 00	
One 2-horsepower 220-volt motor	69 80	
One 1-horsepower 220-volt motor	58 30	
One 3-horsepower 220-volt motor and base	77 00	
		245 10
Ten portable tables		144 25
Five No. 18 golden oak stools		2 00
Balance on pony Whitlock press		1,357 50
22,096 pounds linotype metal		1,604 71
Two Rogers linotype attachments, mats, etc.		1,115 66
Six Inland metal feeders		202 53
Two No. 1 Twentieth Century Latham Monitor wire stitchers		605 50
One lot brass type		74 83
Three No. 1 Standard round-hole punching member		22 50
One 10 x 15 Buckeye ink fountain		9 80
Iron furniture, etc.		282 32
150 galvanized iron galleys, 24 x 8⅝	$56 25	
Two brass galleys, 10 x 16	5 72	
		61 97
Eight Paragon steel chases, 22¾ x 29¼	$63 92	
Four Paragon steel chases, 32 x 45¾	49 32	
Twelve Paragon steel chases, 27¾ x 41¾	137 04	
		250 28
Total		$6,360 45

BILLS RECEIVABLE.

June 30, 1915.

Name of institution	Amount
Adjutant General	$149 22
Agricultural Society	33 74
Attorney General	360 11
Banking Department	1,620 98
Board of Charities and Corrections	24 70
Board of Control	339 16
Board of Dental Examiners	143 91
Board of Education	521 47
Board of Education, manufacturing school books	8,455 90
Board of Equalization	60 80
Board of Forestry	12 20
Board of Health	352 88
Board of Health, miscellaneous funds	68 29
Board of Medical Examiners	54 86
Board of Pharmacy	70 82
Civil Service Commission	47 45
Clerk of Supreme Court	62 47
Controller	658 08
Controller, collection of state revenue	75 51
Controller, compiling municipal statistics	7 10
Controller, Inheritance Tax Department	20 37
Corporation Department	218 81
Deaf and Blind School	104 32
Dairy Bureau	7 10
District Court of Appeal, No. 1	38 90
District Court of Appeal, No. 2	119 71
District Court of Appeal, No. 3	200 30
Engineering Department	143 18
Engineering Department, Motor Vehicle Division	1,160 67
Executive Department	161 50
Fish and Game Commission	24 16

BILLS RECEIVABLE—Continued.

June 30, 1915.

Name of institution	Amount
Folsom Prison	$542 04
Girls School	44 85
Harbor Commissioners, San Francisco	926 84
Harbor Commissioners, Eureka	11 88
Harbor Commissioners, San Jose	4 73
Highway Commission	865 50
Horticultural Commission	275 71
Home for Adult Blind	118 32
Immigration and Housing Commission	157 86
Industrial Accident Commission	276 12
Compensation Insurance Fund	66 75
Industrial Welfare Commission	514 81
Insurance Commission	407 55
Labor Statistics Bureau	140 37
Legislature	1,519 25
Legislative Counsel Bureau	604 24
Library Trustees	770 60
Lunacy Commission	595 00
Mining Bureau	3,220 88
Normal School, Chico	63 84
Normal School, Fresno	18 07
Normal School, Los Angeles	134 70
Normal School, San Francisco	750 79
Normal School, San Jose	17 62
Normal School, Santa Barbara	75 80
Panama-Pacific International Exposition Commission	4 42
Polytechnic School	221 74
Preston School of Industry	65 28
Prison Directors, Board of	596 57
Railroad Commission	847 63
Reclamation Board	220 23
Redwood Park Commission	74 87
San Quentin Prison	692 58
Secretary of State	119 68
Secretary of State, License Department	87 60
Secretary of State, Blue Book	4,306 49
Secretary of State, Constitutional Amendments	8,649 19
Superintendent of Public Instruction	1,265 63
Superintendent of State Printing	285 82
Superintendent of Capitol Building and Grounds	168 02
Surveyor General	398 57
Stallion Registration Board	13 97
Treasurer	57 99
Treasurer, Motor Vehicle Division	5 82
Veterans' Home	413 16
Viticultural Commission	56 51
Water Commission	210 36
Weights and Measures Department	56 45
Whittier State School	3 51
Coast Waste Products Company	36 42
M. G. Dodge, old equipment	40
Wm. S. Gloria, old equipment	4 00
Total	$46,305 79

DEPARTMENT PRINTING.

This table shows the appropriation for each department for the sixty-sixth fiscal year and balance brought forward from sixty-fifth fiscal year, the printing done for the sixty-sixth fiscal year, and the balance.

Name of department	Appropriation and balance	Printing account	Balance
Adjutant General	$4,215 86	$2,971 58	$1,244 28
Attorney General	4,655 47	1,604 53	3,050 94
Board of Control	1,125 27	1,125 26	01
Board of Education	1,370 82	1,370 82	------------
Board of Equalization	4,632 90	749 93	3,882 97
Board of Forestry	3,464 15	2,369 15	1,095 00
Board of Health	4,695 39	3,907 12	788 27
California Polytechnic School	909 43	901 73	7 70
Controller	4,592 63	2,339 73	2,252 90
Controller—collection of state revenue	1,293 54	565 02	728 52
Deaf and Blind Institution, Berkeley	338 21	276 31	61 90
Department of Engineering	3,651 68	2,530 11	1,121 57
District Court of Appeal, First District	661 12	195 79	465 33
District Court of Appeal, Second District	806 74	327 74	479 00
District Court of Appeal, Third District	812 50	305 25	507 25
Executive Department	901 59	696 76	204 83
Folsom Prison	1,005 88	899 47	106 41
Home for Adult Blind	250 19	250 19	------------
Horticultural Commission	6,222 52	6,222 52	------------
Industrial Accident Commission	2,500 00	2,500 00	------------
Labor Statistics	4,042 21	1,905 84	2,136 37
Legislature	129,881 37	91,557 10	38,324 27
Lunacy Commission	3,000 74	3,000 74	------------
Normal School at Chico	566 00	566 00	------------
Normal School at Fresno	594 87	360 35	234 52
Normal School at Los Angeles	1,058 51	861 47	197 04
Normal School at San Diego	600 00	598 47	1 53
Normal School at San Jose	828 91	739 61	89 30
Normal School at San Francisco	608 80	608 80	------------
Normal School at Santa Barbara	300 29	300 29	------------
Prison Directors	429 66	429 66	------------
Secretary of State	5,775 59	3,406 71	2,368 88
Secretary of State, Blue Book	5,000 00	4,306 49	693 51
Secretary of State, License Department	3,704 26	410 62	3,293 64
San Quentin Prison	500 00	500 00	------------
Superintendent of Public Instruction	17,964 37	8,518 54	9,445 83
Superintendent of State Printing	427 18	363 19	63 99
Supreme Court Clerk	1,425 88	893 71	532 17
Surveyor General	960 90	960 90	------------
Treasurer	1,213 70	1,105 49	108 21
Veterans' Home	761 23	760 50	73
Veterinarian	308 70	87 88	220 82
Various Officers' Fund	2,250 00	1,493 18	756 82
Totals	$230,309 06	$155,844 55	$74,464 51

VARIOUS OFFICERS' FUND.

Allowed by the State Board of Control.

Board of Control	$218 95
Building and Loan Commission	250 59
Controller (Inheritance Tax Department)	299 46
Horticultural Commission	169 59
Lunacy Commission	548 66
Pilot Commission	5 93
Total	$1,493 18

CASH BUSINESS.

Name of institution	Amount
Adjutant General, high school cadets	$32 02
Agricultural Society	4,677 15
Banking Department	2,129 65
Board of Charities and Corrections	1,156 40
Board of Education	12 89
Board of Education, school book appropriation	63,077 50
Board of Education, Teachers' Retirement Salary Fund	215 33
Board of Education, appropriation for clerical assistance	889 84
Board of Health, tuberculosis appropriation	333 86
Board of Health, Contagious Disease Fund	97 38
Board of Health, Communicable Disease Fund	32 52
Board of Health, Hygienic Laboratory Fund	198 13
Board of Health, Nurses' Registration Fund	867 90
Board of Health, pure food and drugs	80 44
Board of Health, Cold Storage Fund	41 14
Board of Medical Examiners	625 87
Board of Optometry	229 07
Board of Pharmacy	301 67
Building and Loan Commission	57 26
Civil Service Commission	791 98
Conservation Commission	130 34
Controller, Inheritance Tax Department	111 41
Controller, compiling municipal statistics	1,357 84
State Corporation Department	535 63
Dairy Bureau	296 41
Board of Dental Examiners	334 61
Engineering Department, prisons	28 92
Engineering Department, irrigation districts	307 47
Engineering Department, Motor Vehicle Division	18,858 02
Fish and Game Commission	2,107 70
Folsom Prison, support appropriation	116 57
Harbor Commission, Eureka	65 71
Harbor Commission, San Francisco	3,757 22
Highway Commission	7,688 13
Home for Adult Blind, Adult Blind Fund	99 81
Immigration and Housing Commission	1,727 41
Industrial Accident Commission	2,241 21
Compensation Insurance Fund	3,287 45
Insurance Commissioner	3,793 94
Legislative Counsel Bureau	698 42
Library Trustees	8,213 73
Lunacy Commission, contingent appropriation	5 28
Mining Bureau	5,487 35
State Normal School, Chico, Contingent Fund	63 84
Humboldt Normal School	49 29
State Normal School, San Francisco	7,910 51
Normal School, Santa Barbara	4 98
Panama-Pacific International Exposition Commission	44 93
Commission to Investigate Old Age Insurance, etc.	22 19
California Polytechnic School	190 66
Preston School of Industry	354 13
Prison Directors	166 91
Railroad Commission	16,422 55
Reclamation Board	529 19
Redwood Park Commission	84 72
San Quentin Prison, support appropriation	363 73
Secretary of State, Constitutional Amendment Fund	36,419 48
California Stallion Registration Board	345 49
Superintendent Capitol Building and Grounds	208 61
Supreme Court	30 41
Treasurer, Motor Vehicle Department	331 15
State Treasurer, bonds	50
Training School for Girls	208 37
Trustees Sutter's Fort	14 12
University of California, Lick Observatory	2,333 58
Veterans' Home	1,042 23
Viticultural Commission	213 35
Water Commission	930 50

CASH BUSINESS—Continued.

Name of institution	Amount
Industrial Welfare Commission	$627 18
Superintendent Weights and Measures	846 96
Whittier State School	27 66
Sale of Donnell cutter to J. M. Anderson	40 00
Sale of old nickel plating dynamo to Charles A. Bailes	15 00
Sale of dross to Great Western Smelting and Refining Company	65 91
Sale of one lot old type cases to D. E. Rettig	20 00
Sale of two chases to Wm. S. Gloria	4 00
Sale of old type cases to State Library	1 40
Sale of gold leaf waste to H. S. Durden	152 67
Sale of waste paper to firms as follows:	
Coast Waste Products Company	389 95
California Paper and Board Mills	325 55
A. S. Hopkins Company	16 00
Bert McDowell Company	8 00
Total	$207,914 28

LEGISLATIVE BILL ROOM MAILING ACCOUNT.

Appropriated by Forty-first Legislature (Chapter 12)		$7,500 00
Drawn:		
February 9, 1915 (warrant 20695)	$700 00	
April 14, 1915 (warrant 28378)	1,000 00	
June 2, 1915 (warrant 32805)	300 00	
	$2,000 00	
Stamps received from post office:		
February 9, 1915	100 00	
February 13, 1915	50 00	
February 17, 1915	100 00	
February 18, 1915	25 00	
February 24, 1915	50 00	
March 15, 1915	50 00	
March 30, 1915	100 00	
April 2, 1915	100 00	
April 6, 1915	100 00	
April 14, 1915	100 00	
April 14, 1915	25 00	
April 20, 1915	100 00	
April 26, 1915	100 00	
May 1, 1915	80 00	
May 3, 1915	200 00	
May 4, 1915	50 00	
June 2, 1915	50 00	
June 28, 1915	100 00	
July 16, 1915	50 00	
August 15, 1915	100 00	
September 18, 1915	70 00	
October 2, 1915	300 00	
Total amount drawn	$2,000 00	
Total amount postage used	1,992 00	
Stamps on hand July 1, 1916	8 00	
		2,000 00
Balance of appropriation available		$5,500 00

THE STATE PRINTING.

(From the Report of the State Controller.)

Below is shown a tabulation of interest as illustrating the transactions of the State Printing Office for a period extending from July 1, 1892, to June 30, 1916:

	Total expenditures	For school textbooks	Other than textbooks
Five years, 1892-1897	$1,416,209 56	$442,839 03	$973.370 53
One year, 1897-1898 (appropriation vetoed)	98,989 09	92,000 93	6,979 16
Five years, 1898-9-1903	990,794 94	397,781 49	593,013 25
Five years, 1903-4-1908	1,413,517 94	693,772 58	719,745 36
Three years, 1908-9-1911	853,564 83	388,774 21	464,790 85
Total, 19 years	$4,773,076 36	$2,015,177 24	$2,757,899 15
Average, yearly	$251,214 75	$106,061 96	$147,257 85
One year, 1911-1912	$217,608 96	$68,011 38	$149,597 58
One year, 1912-1913	395,486 22	119,480 16	276,006 06
One year, 1913-1914	525,476 18	249,820 63	275,655 55
One year, 1914-1915	430,964 22	113,657 57	317,306 65
One year, 1915-1916	369,304 65	105,444 85	263,859 80
Total, five years	$1,938,840 23	$656,414 59	$1,282,425 64
Average, yearly	$387,768 05	$131,282 92	$256,485 13

A marked increase in yearly expenditures is noted, during the five-year period last past, over the average shown for the nineteen preceding years, but this increase does not argue less efficient administration on the part of the department, being amply accounted for by the increased distribution of textbooks under the free textbook act of 1911, and by the demands for blanks, printing and supplies growing out of the establishment of numerous new boards, commissions, etc., in the interest of efficiency and public welfare, and the broadening of the activities of some of the older departments of state government along the same lines, a notable instance being the greatly augmented powers and duties of the State Board of Control.

The future expenditures of the printing office will without doubt be much greater per year, owing to the increase in cost of paper and all printing supplies.

The production of free textbooks by the Department of Printing during the past five years is reported as follows:

Fiscal year	Year	Number of books	Cost
Sixty-third	1911-1912	684,547	$68,011 38
Sixty-fourth	1912-1913	954,174	119,480 16
Sixty-fifth	1913-1914	1,392,670	249,820 63
Sixty-sixth	1914-1915	650,100	59,436 75
Sixty-seventh	1915-1916	*1,069,877	73,916 52

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*This particular item calls attention to the fact that the annual production by the department has been constantly increasing with relatively lowered cost per item through careful management and more modern equipment. The production of 1,069,877 items at a cost of $73,916.52 is largely due to the issuance of a great number of small writing books.

SUMMARY OF TEXTBOOKS PRINTED.

July 1, 1914-June 30, 1915.

	Number	Cost		Number	Cost
Primer	25.200	$2,019 34	English Lessons, I	25,200	$3,205 74
First Reader	25,200	1,874 23	Hygiene	25,200	2,261 81
Second Reader	25,150	2,183 12	Civics	25,100	3,821 60
Speller, I	25,200	2,381 66	Writing Book I	51,000	1,288 67
Speller, II	25,300	2,523 56	Writing Book II	51,000	1,291 71
Introductory Arithmetic	50,450	5,133 63	Writing Book III	51,900	1,308 90
Advanced Arithmetic	25,300	3,135 50	Writing Book IV	51,600	1,307 32
Introductory Geography	25,200	4,883 29	Writing Book V	51,600	1,424 69
Advanced Geography	25,200	8,435 91	Teachers' Manual	15,000	1,139 82
Introductory History	25,200	4,743 70			
Brief History	25,100	5,072 55	Totals	650,100	$59,436 75

SCHOOL BOOKS DISTRIBUTED.

Sixty-sixth Fiscal Year, 1914-1915.

Primer	12,380	Brief History	17,773
First Reader	10,511	Introductory Geography	33,636
Second Reader	11,716	Advanced Geography	35,919
Third Reader	10,573	Primer of Hygiene	12,565
Fourth Reader	10,356	Civics	10.306
Fifth Reader	8,547	Writing Book I	35,582
Speller, I	33,107	Writing Book II	33,530
Speller, II	20,484	Writing Book III	36,228
First Arithmetic	28,298	Writing Book IV	31,313
Advanced Arithmetic	22.843	Writing Book V	32,112
New Lessons, I	17,209		
New Lessons, II	17,136		
Introductory History	11,035	Total	493,159

SCHOOL BOOKS SOLD.

Sixty-sixth Fiscal Year, 1914-1915.

Name	Number	Amount	Name	Number	Amount
Primer	2,770	$415 50	Brief United States History	1,119	$458 79
First Reader	2,440	366 00	Introductory Geography	1,430	457 60
Second Reader	2,320	417 60	Advanced Geography	967	522 18
Third Reader	1,629	309 51	Hygiene	657	118 26
Fourth Reader	1,127	270 48	Civics	604	187 24
Fifth Reader	709	170 16	Writing Book I	1,409	56 36
Speller, I	3,680	515 20	Writing Book II	1,250	50 00
Speller, II	1,918	268 52	Writing Book III	1,144	45 76
First Arithmetic	2,759	496 62	Writing Book IV	945	37 80
Advanced Arithmetic	1,549	356 27	Writing Book V	1,036	41 44
English Lessons, I	1,942	446 66			
English Lessons, II	1,654	430 04			
Introductory History	899	278 69	Totals	35,957	$6,716 68

SCHOOL BOOKS IN WAREHOUSE.

June 30, 1915.

Primer	14,418	Introductory Geography	15
First Reader	22,011	Advanced Geography	19,670
Second Reader	18,876	Primer of Hygiene	17,260
Third Reader	22,221	Civics	19,524
Fourth Reader	29,392	Writing Book I	1,977
Fifth Reader	35,623	Writing Book II	8,860
Speller, I	38,356	Writing Book III	1,624
Speller, II	26,663	Writing Book IV	8,243
First Arithmetic	16,569	Writing Book V	432
Advanced Arithmetic	19,250	English Lessons, I (old)	2,683
English Lessons, I (new)	35,118	English Lessons, II (old)	1,147
English Lessons, II (new)	28,637		
Introductory History	28,605		
Brief History	15,764	Total	432,938

MANUFACTURING RECORD UPON SCHOOL BOOKS.

Sixty-sixth and Sixty-seventh Fiscal Years.

Textbook	Eastern price	Manufacturing cost in 1911	Manufacturing cost in 1914	Manufacturing cost in 1915-16	New series in 1916-17
Primer	$0.32	$0.172	$0.08	[1]($0.08)	[3]$0.089
First Reader	.32	.152	.078	.075	[4].091
Second Reader	.35	.1875	.087	(.087)	[4].103
Third Reader	.40	.31	.112	.105	
Fourth Reader	.60	.33	.122	(.122)	
Fifth Reader	.60	.33	.125	(.125)	
Sixth Reader	.75				[5].165
Seventh Reader	.75				[5].168
Eighth Reader	.75				[5].17
Speller, I	.25	.165	.097	.088	
Speller, II	.30	.165	.098	.087	
First Arithmetic	.35	.2075	.103	.099	
Advanced Arithmetic	.60	.32	.126	.121	
English Lessons, I	.45	.20	.13	.127	
English Lessons, II	.60	.34	.142	.135	
Introductory History	.65	.30	.139	(.14)	[6].195
Advanced History	1.00	.52	.201	.202	
Introductory Geography	.60	.44	.199	.188	
Advanced Geography	1.00	.58	.332	[2].32	
Hygiene	.45	.17	.096	(.096)	
Civics	.75	.375	.156	(.156)	
Writing Book I	.05	.05	.025	.025	[7].009
Writing Book II	.05	.05	.025	.025	.009
Writing Book III	.05	.05	.025	.025	.009
Writing Book IV	.05	.05	.025	.025	.009
Writing Book V	.05	.05	.025	.025	.009
Writing Book VI					.009
Writing Book VII					.009
Writing Book VIII					.009
History of California					.0231
Teachers' Manual					.072
Constitution of California					.166
Totals	$12.09	$5.514	$2.548	$2.478	

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[1] No books of old series printed; figures in parenthesis entered for comparison.

[2] Contains 16-page supplement California history.

[3] New series, containing three-color plates and heavier stock.

[4] New series, containing two-color plates throughout.

[5] Estimated cost of new series; type and plate work by State Printing Office. This cost includes the electrotyping, reducing cost of subsequent issues.

[6] Estimated cost of new and larger series.

[7] The new series of copy books are a smaller text than the former writing books.

BOOKS DISTRIBUTED, SOLD, AND ROYALTIES PAID.

Sixty-sixth Fiscal Year, 1914-1915.

Name	Distributed, sold	Royalty paid	Amount
Primer	15,150	.048	$727 19
First Reader	12,951	.048	621 65
Second Reader	14,036	.0525	736 87
Third Reader	12,202	.06	732 12
Fourth Reader	11,483	.09	1,033 47
Fifth Reader	9,256	.09	833 04
Speller, I	36,787	.025	919 64
Speller, II	22,402	.025	560 03
First Arithmetic	31,057	.0525	1,630 51
Advanced Arithmetic	24,392	.09	2,195 28
English Lessons, I	19,151	.0675	1,292 66
English Lessons, II	18,790	.09	1,691 10
Introductory History	11,934	.15	1,790 10
Brief History	18,892	.15	2,833 80
Introductory Geography	35,066	09	3,155 94
Advanced Geography	36,886	.15	5,532 90
Primer of Hygiene	13,222	.06	793 32
Civics	10,910	.125	1,363 76
Writing Book, I	36,991	.01	369 91
Writing Book, II	34,780	.01	347 80
Writing Book, III	37,372	.01	373 72
Writing Book, IV	32,258	.01	322 58
Writing Book, V	33,148	.01	331 48
Totals	529,116	------------	$30,188 87

SUMMARY OF PAPER PURCHASES AND TRANSFERS.

Bond Paper	$8,416 52	Book Paper	$45,442 58
Flat Paper	2,979 07	School Book Paper (new)	25,586 21
Ledger Paper	3,340 96	School Book Paper (old, transferred to State account)	20,328 94
Manila Paper	1,697 60		
Cover Paper	970 85		
Card Board	2,582 10		$117,747 48
Shipping Tags	34 98	Stock purchases transferred to expense account and to Bindery Stock accounts	579 17
Miscellaneous	640 14		
Improved Stock items	484 61		
Envelopes	5,079 65		
Waste Paper used on Jobs	163 87	Total	$117,168 31

GENERAL PAPER STOCK PURCHASES.

ENVELOPES.

100,000	No. 6¼ White Wove XXX	$90 00	5,000	Columbia Clasp Manila No. 20	$16 53
950,000	No. 6¾ White Wove XXX	959 50	3,000	Columbia Clasp Manila No. 35	10 78
16,000	No. 9 White Wove XXX	24 80	10,000	Columbia Clasp Manila No. 50	41 68
867,000	No. 10 White Wove XXX	1,482 57	5,000	Columbia Clasp Manila No. 55	21 56
28,000	No. 11 White Wove XXX	57 40	5,000	Columbia Clasp Manila No. 60	23 00
10,000	No. 12 White Wove XXX	21 50	40,000	Columbia Clasp Manila No. 65	201 25
5,000	No. 6¾ Window	7 00	45,000	Columbia Clasp Manila No. 70	239 35
23,000	No. 10 Window	53 96	60,000	Columbia Clasp Manila No. 75	336 36
25,000	No. 6¼ Manila 50 lb.	14 75	21,000	Columbia Clasp Manila No. 80	131 63
20,000	No. 9 Manila 50 lb.	17 80	40,000	Columbia Clasp Manila No. 90	281 76
177,000	No. 10 Manila 50 lb.	180 54	3,000	Columbia Clasp Manila No. 93	23 20
15,000	No. 11 Manila 50 lb.	19 65	3,000	Columbia Clasp Manila No. 97	23 98
5,000	No. 12 Manila 50 lb.	7 00	5,000	White o. e. thumb cut 4⅜ x 10¼	16 75
5,000	No. 14 Manila 50 lb.	8 00	2,500	Manila o. e. 36 lb. 5½ x 8¼	3 98
134,852	6½ x 9½ Manila 50 lb. open end	223 85	1,000	Manila o. e. 50 lb. 7½ x 10½	2 77
20,000	6½ x 9½ Manila XXXX open end	60 00	1,500	No. 049 o. e. 5⅜ x 7½ W. Wove	3 98
10,000	6¼ 20 lb. Bank Bond, reg. fin.	14 79	1,000	6 x 9 o. e. 50 lb. White Eps.	2 45
10,000	6¼ 20 lb. Bank Bond, linen	16 36	3,000	No. 3 White Drug Eps.	1 56
25,000	6¾ 20 lb. Bank Bond, reg. fin.	39 10	10,000	Cloth lined W. o. e. 4¼ x 9⅞	144 50
20,000	6¾ 20 lb. Bank Bond, linen	36 00	500	No. 105 White o. e. 5½ x 8¼	1 23
25,000	No. 6¾ Old Veda Bond, 20 lb.	39 10	5,000	Cloth lined dbl. t. c. 4¼ x 9⅞	74 00
15,000	No. 10 Old Veda Bond, 20 lb.	39 77	1,000	No. 14 Cloth lined Envelopes	19 50
10,400	No. 11 National Bank Bond	28 60			
5,000	Columbia Clasp Manila No. 15	15 81			$5,079 65

BOOK PAPERS.

Reams.			Reams.		
29-16/50	Brief, 21 x 29, 60 lb.	$87 95	6854- 3/20	MF Book paper, 96 lb.	$27,080 38
1020	S & S C Bk., 25 x 38, 65-lb.	2,870 81	10½	Cameo Sepia 25 x 38, 75 lb.	86 63
1007-19/20	S & S C Bk. paper, 130 lb.	5,673 74			
4936- 5/100	MF Book paper, 48 lb.	9,643 07			$45,442 58

CARD BOARD.

Sheets.			Sheets.		
6,000	Velum Plate Bristol 22½ x 28½-100	$112 80	2,000	3 x 5 Cut Filing Cards	$1 20
16,900	Velum Plate Bristol 22½ x 28½-120	380 25	40,000	No. 63 Round Cor. Bristol Cards	53 20
5,000	Colored Bristol 22½ x 28½-120 lb.	72 50	1,000	No. 451OE Blue Guides, Lib. Bu.	9 00
24,500	Tag Board 22½ x 28½-120 lb.	211 68	500	No. 451OE Buff Cen., Lib. Bu.	4 50
5,500	Tag Board No. 1 22½ x 28½-120 lb.	99 00	20,000	No. 35E, size 2 Stock Rec. Cards	165 00
500	Pacific Index Bristol 120 salmon	7 25	12,000	8-ply Comet Blanks	312 00
8,000	Pacific Index Bristol, 140 lb.	224 00	6,000	10-ply Ætna Blanks	204 00
22,000	Velum Plate Bristol, 140 lb.	583 00			
3,000	Tag Board, 180 lb.	38 88			$2,582 10
2,360	Pacific Index Bristol, 220 lb.	103 84			

SHIPPING TAGS.

5,000	No. 5 E Manila	$3 38	5,000	No. 8 E Manila	$5 40
5,000	No. 5 G Manila	2 25	15,000	No. 8 Red E. C. Tags	21 25
3,000	No. 7 E Manila	2 70			
					$34 98

GENERAL PAPER STOCK PURCHASES—Continued.

MISCELLANEOUS.

17 Sh. Dbl. Corru. Straw Bd. 36 x 36	$0 97
54 Sh. What. Drawing Paper, 140 lb.	9 52
2,500 Pcs. No. 1 Veg. Parchment Paper 18 x 20	7 50
477 Sh. Gen. Parch. Paper 18 x 24	343 44
2 Rolls Tracing Cloth	18 80
20 Rms. White N. C. Gum Paper 17 x 22	70 00
2 Rms. Yellow No. 608 Gum Paper 20 x 25	$8 00
18 Rms. W. News Paper 36 x 48–64 lb.	41 56
21 Rms. Safety Paper 17 x 28	133 35
10 Rms. White Tissue Paper 20 x 30	7 00
	$640 14

IMPROVED STOCK.

(Printed and ruled after purchase.)

37–57/500 rms. Old Veda Bond, tint. Capitol	$262 31
5 rms. Oakland Flat 28 lb. Bill Hds.	20 62
750 sets appropriation ledger sheets	18 82
7,500 sheets stock ledger, fly sheets	98 73
2,500 sheets stock ledger, master sheets	$43 02
2,500 sheets claim blank, 32 lb. Oakland	19 26
2,525 sheets legal ruled, 32 lb. Oakland	21 85
	$484 61

FLAT PAPERS.

Reams.		Cost.
25	Oakland, 17 x 28, 24 lb.	$46 50
220	Oakland, 17 x 28, 28 lb.	477 40
164.9	Oakland, 17 x 28, 32 lb.	408 95
25	Oakland, 22 x 34, 40 lb.	77 50
170	Oakland, 22 x 34, 48 lb.	632 40
50	Oakland, 24 x 38, 56 lb.	217 00
160	colored, 17 x 22, 24 lb.	372 00
5	Kingston No. 1, 19 x 24, 28 lb.	14 00
25	Kingston, 17 x 28, 32 lb.	80 00
30–220/500	R. R. folder, 25 x 38, 60 lb. blue	118 72
10	Eureka, 17 x 28, 40 lb.	$37 00
5	Palo Alto, 17 x 28, 40 lb.	18 50
15	Palo Alto, 22 x 34, 48 lb.	66 60
20	Hamburg, 17 x 28, 20 lb.	25 00
25	Hamburg, 17 x 28, 24 lb.	37 50
25	Hamburg, 17 x 28, 32 lb.	50 00
120	Hamburg, 22 x 34, 40 lb.	300 00
		$2,979 07

LEDGER PAPERS.

Reams.		Cost.
126	Reliance, 16 x 21, 30 lb.	$529 20
111	Reliance, 19 x 24, 32 lb.	497 28
65	Reliance, 17 x 28, 40 lb.	364 00
41	Reliance, 19 x 24, 44 lb.	252 56
15	Reliance, 20 x 28, 54 lb.	113 40
117.3	Reliance, 21 x 32, 60 lb.	985 32
15	Reliance, 24 x 38, 64 lb.	134 40
10	Reliance, 23 x 31, 72 lb.	$100 80
21½	Reliance, 23 x 36, 80 lb.	240 80
5	Reliance, 24 x 38, 88 lb.	61 60
5	Reliance, 19 x 48, 88 lb.	61 60
		$3,340 96

MANILA PAPERS.

Reams.		Cost.
46	Yellow Chemical, 17 x 28, 20 lb.	$46 00
11	Yellow Chemical, 19 x 24, 20 lb.	11 00
165	Yellow Chemical, 22 x 34, 32 lb.	264 00
70	Yellow Chemical, 28 x 42, 50 lb.	175 00
185	White Chemical, 28 x 34, 56 lb.	518 00
32.9	Manila flat No. 1, 40 x 48, 150 lb.	$171 50
55	Jute Manila No. 1, 36 x 48, 200 lb.	511 50
		$1,697 00

COVER PAPER.

Reams.		Cost.
10	MMS. Blue Wove, 18 x 31, 40 lb.	$53 00
38	S. & S. C., var. col , 20 x 25, 50 lb.	110 20
40	S. & S. C., var. col., 20 x 25, 65 lb.	150 80
101½	Buckeye, var. col., 20 x 25, 65 lb.	542 70
3	Buckeye, lavender, 22 x 28, 80 lb.	19 80
2	Princess, gray, 22½ x 28½, 90 lb.	$26 10
4½	Cameo Sepia, 22½ x 28½, 130 lb.	68 25
		$970 85

GENERAL PAPER STOCK PURCHASES—Continued.

BOND PAPER.

Reams.		Cost.
75	Jackson bond, white, 17 x 22, 10 lb.	$105 00
70	Jackson bond, white, 17 x 28, 12 lb.	117 60
25	Bank bond, russet, 17 x 22, 16 lb.	44 00
35	Bank bond, white, 17 x 28, 16 lb.	61 60
35	Bank bond, pink, 17 x 28, 20 lb.	77 00
60	Bank bond, canary, 17 x 28, 20 lb.	132 00
15	Bank bond, blue, 17 x 28, 20 lb.	33 00
40	Bank bond, white, 17 x 28, 20 lb.	88 00
60	Bank bond, white, 17 x 28, 24 lb.	158 40
458	Bank bond, white, 22 x 34, 32 lb.	1,612 16
50	Bank bond, russet, 22 x 34, 32 lb.	176 00
5	Bank bond, g. rod, 22 x 34, 32 lb.	17 60
83½	Bank bond, opaline, 22 x 34, 32 lb.	293 92
183-9/20	Bk. bd., buff, etc., 22x34, 32 lb.	645 74
50	Bank bond, pink, 22 x 34 32 lb.	176 00
45	Bank bond, blue, 22 x 34, 32 lb.	158 40
30	Bank bond, gray, 22 x 34, 32 lb.	105 60
170	Bank bond, white, 22 x 34, 40 lb.	748 00
5⅖	Bank bond, blue, 22 x 34, 40 lb.	23 76
6	Bank bond, pink, 22 x 34, 40 lb.	26 40
5	Bank bond, corn, 24 x 38, 40 lb.	22 00
10	Bank bond, blue, 24 x 38, 40 lb.	$44 00
6	Bank bond, pink, 24 x 38, 40 lb.	26 40
6	Bank bond, canary, 24 x 38, 40 lb.	26 40
10	Bank bond, blue, 24 x 38, 40 lb.	44 00
40	Bank bond, white, 24 x 38, 40 lb.	176 00
20	Bank bond, white, 24 x 38, 48 lb.	105 60
62¼	Bank bond, white, 25 x 38, 50 lb.	342 38
80	Agawam bd., white, 17 x 28, 16 lb.	230 40
106	Columbian bd., blue, 17 x 28, 20 lb.	148 40
20	Old Veda bd., white, 17 x 28, 16 lb.	44 80
193-71/500	Old Veda bd., white, 22 x 34, 40 lb.	1,081 59
20	Success bond, linen, 22 x 34, 40 lb.	124 00
25	Map bond, 28 x 44, 40 lb.	130 00
17	Bro. Jno. bd., R. F., 17 x 28, 16 lb.	38 08
25	Crane's bond, 17 x 22, No. 21	213 69
65	Crane's bond, 17 x 22, No. 25	641 07
15	Crane's bond, 17 x 28, No. 25	177 53
		$8,416 52

WASTE PAPER USED ON JOBS.

July 1, 1914, to June 30, 1915	$163 87

SCHOOL BOOK STOCK.

Reams.		
2,080¼	S. & S. C. book paper, 31 x 42, 80 lb.	$7,196 25
2,593¾	S. & S. C. book paper, 31 x 46, 90 lb.	10,082 55
1,923-1/50	S. & S. C. book paper, 34 x 51, 100 lb.	8,307 41
		$25,586 21

PRESS ROOM STOCK PURCHASES.

INK.

100 lbs. No. 3676 halftone blue black	$40 00
3 lbs. No. 807 trichromatic yellow	4 50
3 lbs. No. 902 trichromatic red	6 00
3 lbs. No. 403 trichromatic blue	4 50
5 lbs. No. 186Y medium green	2 25
20 lbs. No. 335 medium photo brown	14 00
35 lbs. No. 4773 policy black	14 00
70 lbs. No. 42 white	21 00
60 lbs. No. 26H2 blue lake	36 00
45 lbs. No. 183 bond black	18 00
70 lbs. No. 1629-2 job black	$28 00
40 lbs. No. 21 scarlet lake	26 00
500 lbs. No. 71½ book black	60 00
3,510 lbs. No. 304 halftone black	1,054 00
5 lbs. No. 190 light green	2 25
5 lbs. No. 756 orange yellow	2 00
25 lbs. No. 154 lemon yellow	10 00
2 lbs. No. 1½ copying red	1 00
	$1,343 50

MISCELLANEOUS.

5 gal. boiled linseed oil	$4 00
50 lbs. Lakatine	9 00
5 lbs. magic reducing compound	1 25
5 lbs. oxychloride of manganese	2 50
20 lbs. refined glycerine	$5 30
8 dry batteries	2 00
	$24 05

SUMMARY OF PRESS ROOM.

Inks	$1,343 50
Miscellaneous	24 05
	$1,367 55

BINDERY DEPARTMENT PURCHASES.

PAPERS.

	Brought forward	$1,238 87
10	reams eggshell book paper, 25x38, 65 lb.	38 35
1	ream smooth lining paper, 25x38, 80 lb.	4 00
10	reams marble paper	40 00
5	reams marble paper, fine comb	$59 50
47	sheets tan stencil No. 012, 28 x 42	3 76
47	sheets tan stencil No. 020, 28 x 42	6 11
50	sheets tan stencil No. 030, 28 x 42	8 50
		$1,399 09

BINDERS AND METAL PARTS.

1	set metals, 3″ x 12″ DeLuxe bind.	$9 00
1	set metals, 3″ x 15½″ DeLuxe bind.	7 00
4	sets metals, 3″ x 17″ DeLuxe bind.	26 00
1	set metals, 3″ x 10½″ DeLuxe bind.	6 00
100	sets posts, 3/16″	8 50
160	sets metals, sec. post binders	115 20
1	set metals, Proudfit binder	7 20
1	I. P. Ring binder No. 700	$0 92
5	I. P. Ring binders No. 703	6 55
100	sets metals, KO slotted lock bind.	75 00
164	lbs. band iron No. 14, 1″ for bind.	6 97
250	pairs rubber knobs, binder posts	6 80
		$275 14

BOOKBINDER'S INK.

30	lbs. gloss blue No. 3555	$22 50
30	lbs. gloss black No. 3724	22 50
50	lbs. gloss green No. 2871A	37 50
		$82 50

IMPROVED STOCK.

(Made up after purchase.)

10	loose leaf stock ledgers, canvas	$40 58
10	loose leaf stock ledgers, corduroy	48 84
170	sets binding end papers	5 73
500	sets fly leaves for library books	3 81
12	balls brown shade cord	60
1	100-page check register	21 71
1,875	library titles, labels	$19 94
50	M "Free" labels for school books	44 27
50	52-page stockhold. record books	45 04
100	26-page stockhold. record books	57 24
		287 76

MISCELLANEOUS.

7½	quarts Le Page's glue	$3 60
32½	lbs. Arabicum glue	2 44
38	lbs. red padding composition	5 70
6,600	yards black star tape	82 50
35¾	gross 27″ extra heavy braid laces	25 00
24	boxes eyelets	6 00
1,548	yards head band, cotton	43 34
10	pieces head band, silk brown	4 20
50.7	pks. deep gold leaf, XXX	351 89
		$524 67

BINDERY CLOTH.

2½	yards tracing cloth	$0 50
3,200	yards grey super	112 00
210	yards oilcloth, 45″	46 20
50	yards canton flannel	5 00
5,930	yards Rex vellum XT 17, cloth	753 11
6,673	yards Rex vellum XT spl, cloth	847 47
6,000	yards Rex vellum XT 68, cloth	762 00
6,000	yards Rex vellum XT 70, cloth	762 00
3,000	yards Rex vellum XT 72, cloth	381 00
6,000	yards Rex vellum XT 36, cloth	762 00
150	yards cloth TP 85	25 50
5,018½	yards Indian head muslin, blue peter 36W	$677 50
600	yards plain buckram	128 88
1,377	yards library buckram	354 30
20	yards bleached sign cloth	4 40
100	yards 8-oz. white canvas	15 40
100	yards 12½-oz. 42″ canvas	25 00
1,510	yards brown canvas	232 54
174⅞	yards brown corduroy	95 77
1,000	yards blue silk cloth No. 211	214 80
		$6,205 37

LEATHERS.

1	dozen heavy lining skivers	$9 48
96	Morocco skins, assorted colors	139 92
68	bark skivers XXXX	1,081 20
2,065¾	feet red cowhide	462 73
4,745	feet boarded grain buffing	469 71
33	skins extra heavy title leather, assorted colors	32 67
24	skins thin title leather, black	$21 36
3	dozen morocco splits No. 1	9 00
501¾	feet water grain buffing	57 20
		$2,283 27

BINDERY DEPARTMENT PURCHASES—Continued.

WIRE.

50	spools flat wire, Latham 19 x 21½	$33 50	30	spools round wire No. 24	$20 10
125	spools round wire	83 75	30	spools round wire No. 30	23 10
200	spools flat wire, 20 x 25	134 00			
					$294 45

BINDING BOARDS.

10	bundles tar board No. 20	$10 52	8	bundles Davy's tar board No. 30	$11 40
40	bundles Davy's tar board No. 20	57 00	160	bundles solid straw board No. 30	170 00
40	bundles Davy's tar board No. 25	57 00	128	bundles pulp board No. 50, 26 x 38	160 00
1,318	bundles tar board No. 30, 23 x 31½	1,420 15			
					$1,886 07

PAPERS.

5	reams white rough lining paper, 80 lb.	$25 96
401	reams Kraft paper 23 x 40, 63 lb.	1,212 91
	Carried forward	$1,238 87

PAPER TRANSFER TO BINDERY.

Tag board	$0 50	Cover paper	$0 74
Reliance ledger	2 83	Manila paper	87 50
French gray cover	1 01	Miscellaneous	56
National Bank bond	10		
Brief paper	69		$93 93

School Book Stock Transfer to Bindery Stock.

Case back lining paper	$5 10

Transfer of Bindery Stock to Plant Expenses.

Miscellaneous items	$6 79

FLOUR AND ALUM.

Fifty pounds alum	$2 50
Five barrels flour	25 00
	$27 50

Summary of Bindery Purchases.

Cloth	$6,205 37	Transfer from paper stock	$93 93
Leather	2,283 27	Transfer from school book stock	5 10
Wire	294 45	Flour and alum	27 50
Binding board	1,886 07		
Paper	1,399 09		$13,354 85
Binders and metals	275 14	Transfer to plant expenses	6 79
Binder's ink	82 50		
Improved stock	287 76		$13,348 06
Miscellaneous	524 67		

Inventory of Stock on Hand, June 30, 1915.

MISCELLANEOUS.

Two 600-page long form record books	$19 45
1,000 furloughs, Veterans' Home	1 78
2 400-page blank books, Veterans' Home	15 56
520 bill heads, ruled (2 on)	5 07
2,240 bill heads, ruled (4 on)	18 40
460 bill heads, ruled (6 on)	4 45
624 ledger sheets, appropriation record	15 66
6,950 stock ledger sheets (D. P. A. forms), ruled and printed	91 49
2,125 stock ledger sheets (D. P. A. forms), ruled and printed	36 57
365 sheets 17 x 28 32-lb. flat, legislative desk ruled	3 40
145 blanks, claim ruled	1 71
520 blanks, legal ruled	4 49
1,075 claim blanks, ruled	7 93
2,145 legal blanks, ruled	18 56
1,040 legal blanks, ruled	11 90
265 legislative chief clerk memorandum ruled blanks	1 99
500 Commercial ruled blanks	3 97
385 Old Hempstead bond letter heads, ruled	4 62
1,500 Ardmore linen letter heads, ruled	13 80
250 Imp. parchment linen letter heads, ruled	2 87
750 ruled letter heads	9 38
595 sheets stockholders' record book paper, ruled	13 99
1,948 sheets bankers' safety paper	25 32
5,420 sheets 17 x 22 white noncurling gum paper	37 95
1,850 sheets 20 x 25 noncurling gum paper	18 50
1,000 sheets 20 x 25 yellow gum paper	8 00
4,308 sheets 17 x 28 National safety paper	54 71
7,615 sheets 20 x 24 glazed paper	38 08
1,728 sheets 19 x 24 120-lb. blotting paper	29 71
1,989 sheets 20 x 30 No. 1 white tissue paper	2 59
8,107 sheets No. 1 French folio tissue paper	19 33
6,250 sheets 22 x 34 No. 1 French folio	25 00
1,265 sheets 17 x 22 onion skin paper	5 27
125 sheets Oakland flat, claim blank ruled	1 81
	$573 34

BOOK PAPER.

9,258 sheets 21 x 29 60-lb. brief	$55 51
5,850 sheets 28 x 42 60-lb. M. F.	30 47
141,625 sheets 25 x 38 65-lb. S. & S. C.	797 21
193,250 sheets 38 x 50 130-lb. S. & S. C.	2,175 61
1,097,500 sheets 25 x 38 48-lb. M. F.	4,288 15
17,495 sheets 22 x 40 60-lb. eggshell	131 21
49,500 sheets 25 x 38 80-lb. coated	712 80
86,600 sheets 25 x 38 100-lb. coated	1,558 80
2,943 sheets 25 x 38 80-lb. Exeter eggshell	41 20
8,130 sheets 25 x 38 60-lb. laid	97 56
2,250 sheets 28 x 42 80-lb. coated	32 40
2,000 sheets 28 x 42 100-lb. coated	36 00
	$9,956 92

SCHOOL BOOK PAPER.

110,150 sheets 27 x 33 64-lb. flat paper	$1,462 79
889,250 sheets 31 x 42 80-lb. S. & S. C. book paper	6,146 49
633,100 sheets 31 x 46 90-lb. S. & S. C. book paper	4,921 29
680,075 sheets 34 x 51 100-lb. S. & S. C. book paper	5,875 85
77,375 sheets 27 x 33 100-lb. grey copy book cover	2,166 67
	$20,573 09

Inventory of Stock on Hand—Continued.

COVER PAPER.

655 sheets 17 x 31 37-lb. manuscript	$12 44
2,205 sheets 18 x 31 40-lb. manuscript	23 82
3,595 sheets 18 x 31 40-lb. manuscript, colored	71 90
3,500 sheets 18 x 31 40-lb. M. S., blue wove	37 10
125 sheets 20 x 25 60-lb. Kermes	1 95
14,310 sheets 20 x 25 50-lb. S. & S. C.	82 94
22,465 sheets 20 x 25 65-lb. Buckeye	240 94
3,415 sheets 20 x 25 35-lb. S. & S. C.	15 71
1,967 sheets 20 x 25 50-lb. S. & S. C.	11 59
6,185 sheets 20 x 25 65-lb. S. & S. C.	46 64
505 sheets 20 x 25 65-lb. Old Cloister	17 17
93 sheets 20 x 25 60-lb. Wawona	1 44
400 sheets 22 x 28 60-lb. S. & S. C., colored	3 84
500 sheets 22½ x 28½ Buckeye	7 19
466 sheets 20 x 25 Middlesex, 60-lb.	4 76
1,020 sheets 22 x 28½ 75-lb. Middlesex	12 99
74 sheets 22½ x 28½ 90-lb. Princess antique	1 93
	$594 35

FLAT PAPER.

48 sheets 17 x 28 24-lb. Oakland	$0 18
3,212 sheets 17 x 28 28-lb. Oakland	13 94
12,556 sheets 17 x 28 32-lb. Oakland	62 26
95 sheets 22 x 34 40-lb. Oakland	61
9,182 sheets 22 x 34 40-lb. Oakland	56 93
7,639 sheets 22 x 34 48-lb. Oakland	56 83
5,693 sheets 24 x 38 56-lb. Oakland	49 43
12,116 sheets 17 x 22 16-lb. colored, var. colors	40 71
6,628 sheets 17 x 22 24-lb. colored	33 48
63 sheets 17 x 22 24-lb. Keith, colored	36
9,911 sheets 19 x 24 28-lb. colored	58 28
9,615 sheets 17 x 28 32-lb. colored	64 62
35,525 sheets 17 x 22 24-lb. colored	170 52
1,495 sheets 22 x 34 36-lb. Royal Mills	22 42
805 sheets 22 x 34 44-lb. Royal Mills	14 49
8,270 sheets 18 x 23 36-lb. "No Mill"	72 91
11,330 sheets 18 x 23 40-lb. "No Mill"	113 30
3,605 sheets 17 x 22 28-lb. Standard	$24 22
2,690 sheets 18 x 23 40-lb. Standard	25 82
820 sheets 19 x 24 28-lb. Kingston	4 59
12,500 sheets 17 x 28 32-lb. Kingston	80 00
7,535 sheets 25 x 38 60-lb. R. R. folder, robin's egg blue	58 78
4,680 sheets 17 x 28 40-lb. Eureka	34 63
4,670 sheets 22 x 34 48-lb. Palo Alto	41 48
5,040 sheets 17 x 28 20-lb. Hamburg	12 60
2,932 sheets 17 x 28 24-lb. Hamburg	8 80
6,031 sheets 17 x 28 32-lb. Hamburg	25 10
9,995 sheets 17 x 28 32-lb. Hamburg	39 98
6,036 sheets 22 x 34 36-lb. Hamburg	28 24
4,701 sheets 22 x 34 40-lb. Hamburg	23 50
3,144 sheets 22 x 34 48-lb. Hamburg	19 69
	$1,258 70

LEDGER PAPER.

28,000 sheets 19 x 24 32-lb. Reliance	$250 88
12,435 sheets 17 x 28 40-lb. Reliance	139 27
10,827 sheets 19 x 24 44-lb. Reliance	133 37
1,960 sheets 24 x 28½ 52-lb. Reliance	28 53
7,216 sheets 20 x 28 54-lb. Reliance	109 11
23,821 sheets 21 x 32 60-lb. Reliance	400 21
2,000 sheets 22 x 34 60-lb. Reliance	33 60
135 sheets 23 x 36 64-lb. Reliance, blue	2 42
5,435 sheets 24 x 38 64-lb. Reliance	97 39
4,039 sheets 23 x 31 72-lb. Reliance	81 43
4,604 sheets 23 x 36 80-lb. Reliance	103 36
828 sheets 24 x 38 88-lb. Reliance	20 40
2,500 sheets 24 x 38 88-lb. Reliance	61 60
2,338 sheets 19 x 48 88-lb. Reliance	$57 61
1,010 sheets 16 x 21 20-lb. Browns	15 78
2,103 sheets 19 x 24 44-lb. Browns	72 28
1,135 sheets 20 x 28 54-lb. Browns	47 87
80 sheets 23 x 31 72-lb. Browns	4 50
35 sheets 24 x 38 64-lb. Browns	1 75
825 sheets 20 x 28 54-lb. Weston	34 80
20 sheets 23 x 36 80-lb. Weston	1 25
260 sheets 24 x 38 88-lb. Weston	17 87
25 sheets 20 x 28 54-lb. Crocker	77
345 sheets 24 x 38 88-lb. Crocker	17 33
	$1,733 38

LINEN PAPER.

7,500 sheets 17 x 22 20-lb. Ardmore	$54 00
1,970 sheets 19 x 24 24-lb. Savoy	14 18
11,420 sheets 17 x 22 18-lb. Imp. Parch.	102 78
110 sheets 17 x 22 20-lb. Imp. Parch.	1 10
1,255 sheets 19 x 24 24-lb. Imp. Parch.	15 06
6,480 sheets 17 x 28 28-lb. Imp. Parch.	90 72
14,755 sheets 22 x34 32-lb. Imp. Parch.	$236 08
8,552 sheets 22 x 34 40-lb. Imp. Parch.	171 04
8,730 sheets 24 x 38 48-lb. Imp. Parch.	209 52
	$894 48

Inventory of Stock on Hand—Continued.

BOND PAPER.

17,125	sheets 17 x 22 10-lb. Jackson	$47 96
13,980	sheets 17 x 28 12-lb. Jackson	46 94
2,182	sheets 17 x 22 16-lb. Bank	7 59
614	sheets 17 x 28 16-lb. Bank	2 07
9,020	sheets 17 x 28 20-lb. National Bk.	50 50
1,075	sheets 22 x 34 32-lb. National Bk.	7 91
3,350	sheets 22 x 34 40-lb. Nat. Bk., buff	30 82
2,852	sheets 24 x 38 40-lb. Nat. Bk., blue	26 23
2,000	sheets 24 x 38 40-lb. Nat. Bk., pink	18 40
5,542	sheets 17 x 28 20-lb. Bank, pink	24 39
12,828	sheets 17 x 28 20-lb. Bank, canary	56 35
2,755	sheets 17 x 28 20-lb. Bank, blue	12 12
6,900	sheets 17 x 28 20-lb. Bank, white	30 38
2,740	sheets 17 x 28 24-lb. Bank	14 47
7,113	sheets 22 x 34 32-lb. Bank, white	51 20
16,996	sheets 22 x 34 32-lb. Bank, russet	119 66
1,620	sheets 22 x 34 32-lb. Bank, gol. rd.	11 40
19,863	sheets 22 x 34 32-lb. Bank, opaline	139 61
32,436	sheets 22 x 34 32-lb. Bank, corn, canary, buff, primrose	228 32
7,749	sheets 22 x 34 32-lb. Bank, pink	54 52
10,162	sheets 22 x 34 32-lb. Bank, blue	71 27
10,910	sheets 22 x 34 32-lb. Bank, gray	76 80
9,538	sheets 22 x 34 40-lb. Bank, white	83 91
2,700	sheets 22 x 34 40-lb. Bank, blue	23 76
1,003	sheets 22 x 34 40-lb. Bank, pink	8 83
2,500	sheets 24 x 38 40-lb. Bank, corn	22 00
22,981	sheets 24 x 38 40-lb. Bank	202 25
6,858	sheets 24 x 38 48-lb. Bank	72 07
12,010	sheets 25 x 38 50-lb. Bank	132 11
12,834	sheets 17 x 28 16-lb. Agawam	73 90
3,029	sheets 17 x 28 20-lb. Columbian	8 48
975	sheets 17 x 28 16-lb. Old Veda	4 37
7,466	sheets 22 x 34 40-lb. Old Veda	83 61

4,640	sheets 22 x34 40-lb. l. f. Success	$57 56
4,265	sheets 28 x 44 40-lb. map	43 90
9,165	sheets 17 x 22 Crane's No. 21	156 68
9,160	sheets 17 x 22 Crane's No. 25	180 66
1,585	sheets 17 x 28 Crane's No. 21	31 27
200	sheets 17 x 28 Crane's No. 21	4 08
1,490	sheets 19 x 24 Crane's No. 21	31 29
1,450	sheets 19 x 24 Crane's No. 25	32 87
4,980	sheets 17 x 28 Crane's No. 25	117 89
192	sheets improved 40-lb. Old Veda	1 49
135	sheets 17 x 22 20-lb. Hickory	97
400	sheets 17 x 22 24-lb. Hickory	3 45
3,500	sheets 17 x 28 20-lb. Library, blue	11 20
175	sheets 17 x 28 24-lb. Panama-Pac.	1 16
155	sheets 19 x 24 21-lb. Strathmore	1 49
195	sheets 17 x 22 16-lb. Coupon	1 50
1,150	sheets 19 x 24 20-lb. Stand., opal.	6 90
350	sheets 17 x 28 20-lb. Roman	2 64
225	sheets 19 x 24 20-lb. Reliance	1 08
609	sheets 17 x 28 20-lb. Reliance	2 92
475	sheets 17 x 22 20-lb. Reliance	2 28
875	sheets 17 x 22 16-lb. Reliance	3 36
5,000	sheets 17 x 22 20-lb. Manu., white	12 80
3,400	sheets 17 x 28 24-lb. Community, green	32 64
313	sheets 22 x 34 32-lb. English, gray	2 30
1,600	sheets 24 x 38 40-lb. Eng., canary	14 72
210	sheets 17 x 28 20-lb. Eng., Tuscan	1 05
58	sheets 17 x 28 21-lb. Strathmore, white	73
20	sheets 17 x 28 24-lb. Coupon	23
450	sheets Viking type., 8-lb. 17 x 22	1 35
		$2,606 66

ENVELOPES.

2,250	white wove No. 5	$1 69
24,500	white wove No. 6¼	22 05
55,570	white wove No. 6¾	56 13
12,500	white wove No. 7	16 63
8,250	white wove No. 8	11 55
10,500	white wove No. 9	16 27
61,250	white wove No. 10	104 83
9,250	white wove No. 11	18 97
9,980	white wove No. 12	21 45
3,750	white wove No. 14	10 16
9,000	window No. 10	21 15
21,000	Manila No. 6¼	12 39
22,500	Manila No. 6¾	14 18
3,500	Manila No. 9	3 10
45,200	Manila No. 10, 50-lb.	46 11
15,000	Manila No. 11, 50-lb.	19 65
2,500	Manila No. 11, 770	3 30
250	Manila No. 12	36
5,000	Manila No. 12, 50-lb.	7 00
5,000	Manila No. 14, 50-lb.	8 00
12,152	Manila O. E. 6½ x 9½	20 17
5,000	Bank bond No. 6¼, 20-lb.	7 39
5,000	Bank bond No. 6¼, 20-lb.	8 18
22,000	Bank bond No. 6¾, 20-lb.	34 41
18,000	Bank bond No. 6¾, 20-lb.	32 40
3,400	Old Veda No. 6¾, 20-lb.	5 31
4,000	Old Veda No. 10, 20-lb.	10 60
8,400	National Bank bond No. 11	23 10
1,250	Brother Jonathan No. 6¾	2 55
1,500	Crane's bond No. 6¾	6 79
3,500	Alexis bond No. 6¾	7 56
1,000	Alexis bond No. 10	5 00
3,975	Brother Jonathan bond No. 6¼	6 40
500	Brother Jonathan bond No. 6¾	85
11,250	Brother Jonathan bond No. 10	33 53
2,500	Brother Jonathan bond No. 6¼, linen finish	4 67

6,000	Brother Jonathan bond No. 10, linen finish	$21 42
4,800	Brother Jonathan bond No. 11, linen finish	20 40
5,750	Columbian clasp Manila No. 5	17 97
5,000	Columbian clasp Manila No. 15	15 81
100	Columbian clasp Manila No. 15	44
3,825	Columbian clasp Manila No. 20	12 65
4,000	Columbian clasp Manila No. 30	15 38
3,000	Columbian clasp Manila No. 35	10 78
1,000	Columbian clasp Manila No. 35	3 91
3,750	Columbian clasp Manila No. 40	20 52
6,000	Columbian clasp Manila No. 50	25 01
5,000	Columbian clasp Manila No. 55	21 56
1,475	Columbian clasp Manila No. 55	6 80
5,000	Columbian clasp Manila No. 60	23 00
4,000	Columbian clasp Manila No 60	19 68
10,650	Columbian clasp Manila No. 65	53 55
2,600	Columbian clasp Manila No. 70	13 83
13,800	Columbian clasp Manila No. 75	77 36
11,500	Columbian clasp Manila No. 80	72 06
6,650	Columbian clasp Manila No. 90	46 86
7,200	Columbian clasp Manila No. 93	56 32
4,740	white O. E. thumb cut 4⅜ x 10¼	15 88
500	white O. E., 5½ x 8¼	1 23
5,000	Manila coin No. 2	7 50
500	Manila coin No. 3	75
125	O. E. cloth lined t. cut, 4¼ x 9⅞	2 18
500	amber laid No. 6¾	60
450	baronial No. 7	90
450	baronial No. 5	56
400	wide imperial, 5⅜ x 7½, O. E.	88
650	bank No. 7, 4⅜ x 7⅛	1 46
4,500	blue laid No. 6¼	7 45
4,500	sterling linen laid No. 6¼	23 65
3,250	Marseilles linen laid No. 6¼	9 42
		$1,251 65

Inventory of Stock on Hand—Continued.

CARD BOARD.

2,497	sheets Vellum Plate Bristol, 22½ x 28½, 100 lb.	$46 94
789	sheets white Bristol, 120-lb.	17 80
2,288	sheets standard tint Bristol, 120-lb.	33 17
45	sheets Bristol, colored, 120-lb.	79
150	sheets tag board, 22½ x 28½, 100-lb.	2 10
60	sheets tag board, 22½ x 28½, 110-lb.	62
1,294	sheets tag board, 22½ x 28½, 120-lb.	11 18
1,433	sheets jute tag, 22½ x 28½, 120-lb.	25 79
290	sheets Pacific index Bristol, 22½ x 28½, 120-lb.	4 20
2,720	sheets Pacific index Bristol, 25½ x 30½, 140-lb.	76 24
3,524	sheets white Vellum Plate Bristol, 22½ x 28½, 140-lb.	91 96
3,420	sheets Acme index Bristol, 25½ x 30½, 140-lb.	100 54
1,337	sheets tag board, 180-lb.	17 34
181	sheets Pacific index Bristol, 25½ x 30½, 220-lb.	7 96
205	sheets index Bristol, 22½ x 28½, 120-lb.	6 89
350	sheets Acme index Bristol, 25½ x 30½, 220-lb.	18 48
659	E. guides, blue, fifths, ends	5 93
359	E. guides, buff, thirds, centers	3 23
14,483	mercantile stock record cards, buff, ruled and printed two sides	119 48
2,083	sheets Ætna blanks, 22 x 28, 8-ply	54 16
1,043	sheets Ætna blanks, 22 x 28, 10-ply	35 46
1,454	sheets railroad, 6-ply, assorted colors	34 90
380	sheets china board, 22 x 28, assorted colors	11 40
220	sheets tough check, 22 x 28, white, 3-ply	6 82
397	sheets tough check, assorted colors, 3½-ply	17 86
89	sheets tough check, assorted colors, 22 x 28, 4-ply	2 76
1,593	sheets tough check, colored, 22 x 28, 3-ply	49 38
		$803 38

MANILA PAPERS.

1,418	sheets yellow chem., 17 x 28, 20-lb.	$2 84	12,250	sheets pink chem., 22 x 34, 40-lb.	$51 94
400	sheets yellow chem., 19 x 24, 20-lb.	80	38,765	sheets white chem., 28 x 34, 56-lb.	217 09
1,325	sheets yellow chem., 17 x 28, 24-lb.	3 24	2,576	sheets 40 x 48, 150-lb.	27 99
10,791	sheets yellow chem., 22 x 34, 32-lb.	34 51	16,373	sheets 36 x 48, 200-lb. No. 1 jute	317 23
3,110	sheets pink chem., 22 x 34, 32-lb.	10 54			
3,052	sheets blue chem., 22 x 34, 32-lb.	10 35			$676 53

SHIPPING TAGS.

2,000	linen No. 5 c. x.	$4 28	5,000	Manila No. 6 E	$3 61
2,000	linen No. 6 c. x.	5 12	5,000	Manila No. 6 G	2 47
8,000	Manila No. 4 D	4 80	3,000	Manila No. 7 E	2 70
3,500	Manila No. 5 E	2 36			
5,000	Manila No. 5 G	2 25			$27 59

Inventory of Inks—Press Room.

150	pounds book	$45 00	4	pounds medium green silk	$1 80
16	pounds bond, black	6 40	12	pounds photo brown	8 40
27	pounds job, black	10 80	15	pounds lemon yellow	6 00
8	pounds rose lake	4 00	6	pounds orange yellow	2 40
2	pounds scarlet lake	1 30	1	pound orange	50
2	pounds English vermilion	1 20	4	pounds lakatine	72
1	pound antique red	50	25	pounds job white	7 50
1	pound red copying	50	1	pound oxychloride of manganese	50
3	pounds purple copying	1 50	5	pounds Magic Reducol compound	1 25
2	pounds purple job	1 00	3	gallons boiled linseed oil	2 40
1	pound blue copying	70	3⅛	pounds richgold, ex. brilliant	3 15
22	pounds blue lake	13 20	1	lot miscellaneous broken cans ink	30 00
2	pounds bronze blue	1 40			
4	pounds light green silk	1 80		Total value	$153 92

Inventory of Bindery Material.

73	bundles No. 20 tar board	$76 80
36	bundles No. 20 Davy's tar board	51 30
42	bundles No. 25 Davy's tar board	59 95
104	bundles No. 30 tar board	112 06
104	bundles No. 20 solid straw board	115 70
37	bundles No. 30 solid straw board	39 31
43	bundles No. 50 pulp board	53 75
50	sheets stencil board, .012	4 00
40	sheets stencil board, .020	5 20
30	sheets stencil board, .030	5 10
20	bundles No. 25 tar board	24 00
129	skins Morocco leather, assorted	322 50
510	skins bark skivers, XXXX	675 75
6	skins heavy lining	4 74
446	feet red cowhide	99 90
111	feet black cowhide	24 86
544	feet red boarded grain buffing	53 75
171	feet black boarded grain buffing	16 93
260	feet black water grain	29 64
15	feet red water grain	1 71
26	skins extra heavy title leather	25 74
91	skins thin title leather	80 99
20	skins split Morocco, No. 1	5 00
4½	skins red Morocco	6 55
12	skins Oasis Morocco	17 49
86	skins dressed black roan	107 50
12	skins dressed red roan	15 00
15	skins undressed red roan	18 75
31	skins undressed wood roan	38 75
3,362	labels for library books	36 98
20	lbs. ink, B. B. blue gloss	15 00
21	lbs. ink, B. B. black gloss	15 75
40	lbs. ink, B. B. green gloss	30 00
35	lbs. ink, B. B. white gloss	14 00
38	spools flat wire, 19 x 21½	25 46
36	spools flat wire, 20 x 25	24 12
35	spools round wire, No. 25	23 45
25	spools round wire, No. 24	16 75
2	spools round wire, No. 23	1 34
21	spools round wire, No. 28	14 07
56	bolts gray super XX	78 40
27	rolls cotton head bands	27 22
24	pieces silk head bands	10 08
42	yards canton flannel	4 20
53	yards canton flannel	6 36
68	yards white canvas	10 47
100	yards white canvas	25 00
983	yards brown canvas	151 38
82¾	yards corduroy	45 51
414½	yards German cambric	37 30
20	yards Peter cloth	2 70
17	rolls imp. buckram	850 00
85	rolls buckram, assorted	$850 00
7	rolls blue silk	57 13
148	rolls brown—civics	1,169 79
74	rolls binders cloth, old green—geography	584 60
54	rolls binders cloth, old green—history	426 60
253	rolls binders cloth, old gray	1,442 10
220	rolls binders cloth, asstd., state	1,738 00
4,846	yards muslin	327 10
3,623	yards X T 36 cloth	460 12
3,255	yards X T 36 cloth	447 56
838	yards X T 72 cloth	115 22
3,000	yards X T 72 cloth	381 00
3,496	yards X T 22 red spl. cloth	443 99
3,876	yards X T 22 cloth	532 81
4,522	yards X T 17 cloth	574 29
5,282	yards X T 34 cloth	726 28
1,482	yards Rex vel T 68	188 21
5,396	yards Rex vel T 70	685 29
190	reams 23 x 40 63-lb. Swedish kraft paper	570 87
5	reams common marble paper	20 00
7	reams fine marble paper	83 30
11	reams comb. marble paper	130 90
4	reams chocolate marble paper	16 00
512	lbs. lining paper, in rolls	43 52
9,660	sheets rag paper	65 04
72	yards Portland guards, 24-in.	27 36
36	yards Portland guards, 19-in.	9 00
9	lots "Free" labels for fly leaf of school books	20 75
25	gross black stay binding	75 25
2	packs deep gold leaf	13 90
3	packs pale gold leaf	17 94
65	O. K. metals	46 80
48	O. K. metals	34 56
98	posts 3/16 (4 sec. each)	8 13
50	sectional post metals, 16-in.	36 00
8	sectional post metals, 19-in.	6 00
3	sectional post metals, 22-in.	2 25
445	rubber tips for posts	6 05
1	D. P. A. control ledger	10 70
8	D. P. A. canvas-covered stock ledgers	32 46
8	D. P. A. corduroy-covered stock ledgers	39 06
1	100-page check register	21 71
48	52-pg. stockholders' record books	43 22
98	26-pg. stockholders' record books	56 08
96	lbs. 1-in. band iron for binders	1 15
		$16,146 35

Sixty-seventh Fiscal Year

July 1, 1915, to June 30, 1916

VALUE OF PRODUCTION FOR TWO YEARS.

June 30, 1916.

Departmental	$190,095 79	
School books	77,344 92	
Legislature	17,583 23	
		$285,023 94

June 30, 1915.

Departmental	$195,917 29	
School books	62,573 20	
Legislature	87,077 26	
		345,567 75
Total		$630,591 69
Average monthly business for two years		$26,274 65

FINANCIAL CONDITION.

June 30, 1916.

Resources.

Printing Fund available	$45,871 77	
Appropriations available	8,023 55	
Cash, Farmers and Mechanics Bank	209 35	
Uncompleted jobs	24,069 63	
Bills receivable	33,066 01	
Stock on hand, as per inventory	62,232 31	
		$173,472 62

Liabilities.

Bills payable	$10,593 34	
Accounts payable, textbook stock	20,505 31	
Emergency Fund	300 00	
		31,398 65
Net resources		$142,073 97

COST OF OPERATING PRINTING DEPARTMENT.

Fiscal Year 1915-16.

Purchase of machinery and equipment from Printing Fund		$2,531 27
Operating shipping warehouse for Textbook Commission		5,243 24
Stock used in manufacture of books and printing		97,253 35
Halftones, cuts and other direct charges to jobs		3,066 88
Cost of miscellaneous sales		607 28
Labor expense items—Composition Department	$56,175 05	
Press work	25,749 01	
Bindery Department	53,791 47	
General expense account	35,848 05	
		171,563 58
Appropriation expense—Salary of Superintendent	$5,000 00	
Salary of deputy	2,400 00	
Machinery	14,202 53	
Auto truck	1,025 00	
Painting building, Fifteenth and L streets	1,997 95	
Insurance	2,500 00	
Bond premium	25 00	
		27,150 48
Unfinished work—June 30, 1915	$24,904 23	
June 30, 1916	24,069 63	
		834 60
Reserve to cover vacations occurring after July 1, 1916		3,923 74
		$312,174 42

Income.

From appropriations		$27,150 48
By sales—Printing and binding	$277,594 01	
Waste paper	765 12	
Gold leaf scraps	82 25	
Old equipment, etc.	1,315 30	
Textbook warehouse	5,243 24	
Miscellaneous	4 37	
Overpayments	6 00	
Empty wire spools	13 65	
		285,023 94
		$312,174 42

PAYROLL.

July, 1915	$14,580 80
August, 1915	15,199 95
September, 1915	16,385 95
October, 1915	12,561 50
November, 1915	11,013 05
December, 1915	12,285 15
January, 1916	13,538 40
February, 1916	14,135 30
March, 1916	14,538 30
April, 1916	12,723 55
May, 1916	12,124 65
June, 1916	13,332 45
	$162,419 05

EQUIPMENT PURCHASES FROM PRINTING FUND.

Electrical wiring	$54 36
Two electric fans	38 00
One Coulter hammer control and switch, for platen press	9 60
Three job press counters	9 75
Job press counter attachment	1 50
Miller saw and motor	400 90
Motor with pulley and base	36 70
Brass type (finishing department)	20
850 lbs. 10-point slugs	116 62
Lot Caslon type, etc.	5 03
Balance due on pony press	100 00
One Cowan transveyor	188 40
One doz. Midget quoins	1 96
No. 3 rubber stamp-making equipment	53 00
One electric lamp	2 25
Melting cauldron	30 00
Crude oil heating system	256 10
Three 3/16 paper drills	3 00
Three indirect fixtures	27 00
Five chairs, revolving	28 75
One 48-inch ruling machine	779 00
One lot linotype attachments	93 21
One lot type, etc.	52 31
One ½-horsepower motor	37 43
One 5-horsepower motor, complete	104 10
Lot iron furniture, etc.	102 10
	$2,531 27

DEPARTMENT PRINTING.

This table shows the appropriation for each state department for the sixty-seventh and sixty-eighth fiscal years, the printing done for the sixty-seventh fiscal year, and the balance.

	Appropriation	Printing	Balance
Adjutant General	$6,000 00	$3,143 06	$2,856 94
Attorney General	6,000 00	1,853 63	4,146 37
Board of Equalization	5,000 00	1,677 39	3,322 61
Board of Forestry	6,000 00	1,818 15	4,181 85
Board of Health	8,000 00	3,916 86	4,083 14
Bureau of Labor Statistics	6,000 00	1,777 73	4,222 27
California Polytechnic School	1,500 00	749 29	750 71
California School for Deaf and Blind	600 00	250 06	349 94
Commission of Horticulture	7,500 00	3,573 40	3,926 60
Controller	5,500 00	960 18	4,539 82
Controller, Inheritance Tax	1,800 00	1,236 15	563 85
Engineering Department	5,000 00	2,224 18	2,775 82
Executive Department	1,500 00	464 83	1,035 17
Home for Adult Blind	600 00	192 05	407 95
Judicial Department, Clerk Supreme Court	2,500 00	355 94	2,144 06
Judicial Department, First Appellate Court	1,000 00	268 92	731 08
Judicial Department, Second Appellate Court	1,000 00	256 72	743 28
Judicial Department, Third Appellate Court	1,000 00	262 79	737 21
Legislature	85,000 00	6,800 83	78,199 17
Lunacy Commission	8,000 00	3,647 05	4,352 95
Normal School, Chico	1,200 00	465 17	734 83
Normal School, Fresno	1,000 00	368 38	631 62
Normal School, Humboldt	1,910 00	813 89	1,096 11
Normal School, Los Angeles	2,000 00	876 06	1,123 94
Normal School, San Diego	1,200 00	581 56	618 44
Normal School, San Francisco	1,200 00	500 33	699 67
Normal School, San Jose	2,000 00	890 87	1,109 13
Normal School, Santa Barbara	400 00	200 00	200 00
Secretary of State	9,000 00	2,136 01	6,863 99
Secretary of State, License Department	4,300 00	743 55	3,556 45
Secretary of State, Constitutional Amendments	30,000 00	19,446 74	10,553 26
Superintendent of Public Instruction	20,000 00	6,439 36	13,560 64
Surveyor General	1,700 00	737 57	962 43
Treasurer	1,900 00	597 24	1,302 76
Various Officers' Fund (building and loan)	4,500 00	255 61	4,244 39
Veterinarian	400 00	90 79	309 21
Veterans' Home	2,000 00	999 63	1,000 37
Totals	$244,210 00	$71,571 97	$172,638 03

CASH BUSINESS.

Adjutant General, high school cadets	$156 05
Advisory Pardon Board	23 27
Agricultural Society	3,167 36
Sixth District Agricultural Association	16 32
Bank Department	3,247 41
Board of Architecture, Northern District	19 32
Board of Charities and Corrections	495 84
Board of Accountancy	16 26
Board of Control	2,998 29
Corporation License Tax Exemption Board	29 37
Social Insurance Board	104 02
Dental Examiners	412 23
Board of Education	1,579 78
Board of Education, School Book Fund	77,344 92
Board of Education, Teachers' Retirement Fund	300 97
Board of Embalmers	240 73
Board of Equalization	871 80
Board of Health, miscellaneous appropriations	2,714 40
Board of Medical Examiners	2,021 64
Board of Optometry	234 05
Board of Pharmacy	577 32
Prison Directors	10 92
Board of Examiners in Veterinary Medico	51 67
Building and Loan Commission	57 52
Public Employment Department	768 10
California Polytechnic School	823 50
California School for Girls	204 60
Civil Service Commission	1,164 75
Horticultural Commission (apple account)	199 40
Commission on Rural Credits	337 38
Compensation Insurance Fund	3,084 73
Controller, collection of state revenue	481 39
Controller, municipal statistics	1,439 94
Corporation Department	377 12
Dairy Bureau	341 80
Engineering Department	1,099 94
Engineering Department	557 91
Engineering Department, Motor Vehicle	1,296 00
Fish and Game Commission	4,007 74
Eureka Harbor Commission	25 81
San Francisco Harbor Commission	3,775 43
Highway Commission	6,673 21
Historical Survey Commission	76 48
Immigration and Housing Commission	2,556 43
Industrial Accident Commission	10,392 46
Industrial Welfare Commission	342 03
Insurance Commission	3,609 09
Supreme Court	4 60
Legislative Council Bureau	79 90
Legislature, old account	10,782 40
Legislative Investigation Commission on High School Books	6 16
Library Trustees	6,326 38
Mining Bureau	4,795 72
Motor Vehicle Department	15,610 33
Chico Normal School	56
Los Angeles Normal	267 93
Los Angeles Normal, Contingent Fund	52 88
San Francisco Normal School	2,728 87
San Jose Normal School	543 65
Santa Barbara Normal School	30 11
Panama-Pacific International Exposition Commission	13 99
Pilot Commission	76 65
Preston School of Industry	520 09
San Quentin Prison	431 23
Folsom Prison	188 41
Railroad Commission	14,727 00
Reclamation Board	638 94
Redwood Park Commission	14 13
Smelter Waste Commission	27 36
Stallion Registration Board	432 47
State Purchasing Agent	2,309 86
State Market Commission	540 48

CASH BUSINESS—Continued.

State Tax Commission	$921 21
Superintendent Capitol Building and Grounds	119 23
Treasurer	13 46
University of California	3,821 48
Veterans' Home	196 28
Viticultural Commission	284 91
Water Commission	431 80
Water Problem Commission	7 11
Whittier State School	30 22
Weights and Measures	1,094 78
Printing Department	2,380 18
Women's Relief Corporation Home	21 28
State Printing Department, suspense	11 62
Sales, shipping material	448 91
Total	$211,329 22
Less credit to Legislative Council Bureau for overcharge last year	136 97
Total	$211,192 25

ACCOUNTS RECEIVABLE AS OF JUNE 30, 1916.

Adjutant General	$689 86
Agricultural Society	721 11
Sixth District Agricultural Association	16 32
Attorney General	119 16
Banking Department	94
Board of Charities and Corrections	47 22
State Board of Accountancy	8 81
Board of Control	537 65
Board of Dental Examiners	268 59
Board of Education	36 90
Board of Education, School Book Fund	3,195 63
Board of Education, Teachers' Retirement Fund	16 13
Board of Embalmers	7 93
Board of Forestry	80 43
Board of Health	232 13
Board of Health, Cold Storage	11 66
Board of Health, Contagious Diseases	26 24
Board of Health, Nurses' Registration	84 25
Board of Health, Hygienic Laboratory	95 50
Board of Health, Pure Food	76 44
Board of Health, Tuberculosis Fund	216 22
Board of Health, Sanitary Engineering Department	109 30
Board of Medical Examiners	243 54
Board of Optometry	31 05
Board of Pharmacy	104 96
Board of Prison Directors	607 49
Bureau of Labor Statistics	178 38
Public Employment Bureau	271 25
California Polytechnic School	803 68
California Polytechnic School, Contingent Fund	19 82
California School for Girls	158 39
Civil Service Commission	307 13
Commission of Horticulture	335 17
Commission on Rural Credits	92 54
Compensation Insurance Fund	190 31
Controller	39 31
Controller, Inheritance Tax	167 22
Corporation Department	57 45
Dairy Bureau	37 70
Engineering Department	70 35
Engineering Department, Contingent Fund	130 41
Executive and Administrative Department	173 14
Fish and Game Commission	135 13
Harbor Commission, Eureka	1 23
Harbor Commission, San Francisco	1,493 37
Home for Adult Blind	28 50
Highway Commission	1,566 93

ACCOUNTS RECEIVABLE AS OF JUNE 30, 1916—Continued.

Historical Survey Commission	$24 02
Immigration and Housing Commission	1,478 01
Industrial Accident Commission	1,047 73
Industrial Welfare Commission	230 32
Insurance Commission	328 81
Supreme Court	4 60
Clerk of Supreme Court	45 53
First District Court of Appeal	13 00
Second District Court of Appeal	35 94
Third District Court of Appeal	43 70
Legislative Counsel Bureau	17 79
Legislature	1,101 09
Library Trustees	1,317 13
Commission in Lunacy	239 33
Mining Bureau	241 83
Motor Vehicle Department	1,107 63
Normal School, Chico	131 28
Normal School, Fresno	20 91
Normal School, Humboldt	166 48
Normal School, Los Angeles	31 06
Normal School, Los Angeles, Contingent Fund	21 36
Normal School, San Diego	121 10
Normal School, San Francisco	551 85
Normal School, San Francisco, Bulletin Fund	290 21
Normal School, San Jose	19 73
Normal School, Santa Barbara	1 80
Pilot Commission	76 65
Preston School of Industry	55 70
Folsom Prison	524 09
San Quentin Prison	100 71
Railroad Commission	4,835 21
Reclamation Board	245 10
Redwood Park Commission	79 59
Secretary of State	308 29
Secretary of State, Corporation Licenses	78 39
Social Insurance Department	58 79
State Purchasing Department	1,849 58
State Marketing Commission	154 09
State Tax Commission	38 10
Superintendent of Capitol Building and Grounds	2 22
Superintendent of Public Instruction	781 44
Surveyor General	53 17
Sutter Photo Engraving Company	318 23
Treasurers	81 46
Veterans' Home of California	132 75
Viticultural Commission	120 23
Water Commission	169 60
State Water Problems Conference	42
Whittier State School	10 68
Weights and Measures Department	58 91
Zellerbach Paper Company	162 25
Keystone Type Foundry	326 31
	$33,066 01

MACHINERY PURCHASES FROM APPROPRIATION MADE BY LEGISLATURE.

Two No. 2/0 Miehle presses, No. 9738-9	$7,438 50
Two Dexter Pile type feeders to attach to Miehle presses	3,400 00
Two 5-horsepower motors	384 00
One Bench Pallett embosser	158 00
One multiple spindle drill	387 00
One Fortuna skiving machine	270 50
One new National straight-needle sewer	1,350 00
One double "A" font steel furniture	108 00
One "C" font steel furniture	29 00
One "A" case for furniture	2 00
Two and one-half fonts "C" steel furniture	72 50
One 72-inch knife grinder with automatic feed	603 03
	$14,202 53

MISCELLANEOUS SALES.

American Type Foundry Company, old equipment	$69 93
Norman F. Hall Company, empty spools	13 65
Pacific Coast Paper Company, contract adjustment	23 85
Sutter Independent, old equipment	10 00
Sutter Photo Engraving Company, old equipment	318 23
Zellerbach Paper Company, waste	235 17
Coast Waste Products Company, waste	529 95
Keystone Type Foundry, old material	671 31
W. F. McCarty, wagon	45 00
John Bocklich, spoiled work	38 88
E. E. Carreras, old material	25 35
H. S. Durden, gold leaf	85 25
H. E. Jackson, overpayment	6 00
Pacific Metal Works, old type, etc.	98 98
Peterson & Haller	2 50
Richardson-Case Paper Company	3 30
Chicago Lino-Tabler Company	3 00
R. S. Smith Manufacturing Company	1 37
Martin I. Welsh, old equipment	4 00
San Quentin, old equipment	70 00
	$2,259 72

CALIFORNIA STATE TEXTBOOKS IN 1915-16.*

Name of book	Manufacturing cost state printing	Royalty	Cost and selling price at Sacramento
Primer	$0.08	$0.048	†$0.15
First Reader	.075	.048	†.15
Second Reader	.087	.0525	†.18
Third Reader	.105	.06	.19
Fourth Reader	.122	.09	.24
Fifth Reader	.125	.09	.24
Speller—I	.088	.025	.14
Speller—II	.087	.025	.14
First Arithmetic	.099	.0525	.18
Advanced Arithmetic	.121	.09	.23
New English Lessons—One	.127	.0675	.23
New English Lessons—Two	.135	.09	.26
Introductory History	.14	.15	†.31
Brief History	.202	.15	.41
Introductory Geography	.188	.09	.32
Advanced Geography	.32	.15	.54
Hygiene	.096	.06	.18
Civics	.156	.125	.31
Writing Book—One	.025	.01	†.04
Writing Book—Two	.025	.01	†.04
Writing Book—Three	.025	.01	†.04
Writing Book—Four	.025	.01	†.04
Writing Book—Five	.025	.01	†.04
Totals	$2.478	$1.5135	#$4.60

*Several of these books will changed in the 1916–1917 series, including three additional readers, three added copybooks, and colored plates in Primer, First and Second readers.

†Change in text made in 1916.

#The total price of $4.60 for the full set of books includes, with the cost of California manufacture, also the royalty and warehouse cost.

SUMMARY OF TEXTBOOKS PRINTED.

July 1, 1915-June 30, 1916.

	Number	Cost
Primer, New	57,900	$5,168 13
First Reader, New	59,100	5,337 53
Second Reader, New	60,000	6,195 67
Third Reader	25,200	2,658 48
Speller—One	35,090	3,077 29
Speller—Two	15,070	1,301 79
Introductory Arithmetic	25,035	2,441 62
Advanced Arithmetic	25,015	3,014 91
Introductory Geography	50,450	9,480 70
Advanced Geography	50,340	16,108 85
Advanced History	25,295	5,112 22
English Lessons—Two	25,300	3,403 55
Writing Books—1 to 5	120,400	3,268 64
Copy Books, 1 to 8	490,700	6,519 81
Constitutions	5,000	827 33
Totals	1,069,877	$73,916 52

SCHOOL BOOKS DISTRIBUTED.

Sixty-seventh Fiscal Year, 1915-16.

Primer	14,649
First Reader	12,678
Second Reader	15,030
Third Reader	10,893
Fourth Reader	10,141
Fifth Reader	10,082
Speller Book—One	28,312
Speller Book—Two	19,048
First Arithmetic	26,933
Advanced Arithmetic	22,562
New Lessons—One	14,756
New Lessons—Two	15,706
Introductory History	9,926
Brief History	15,660
Introductory Geography	19,689
Advanced Geography	22,708
Primer of Hygiene	11,220
Civics	8,981
Writing Book—One	41,369
Writing Book—Two	40,647
Writing Book—Three	43,399
Writing Book—Four	40,396
Writing Book—Five	37,185
Total	491,970

SCHOOL BOOKS SOLD.

Sixty-seventh Fiscal Year, 1915-16.

Name	Number	Amount
Primer	2,520	$378 00
First Reader	2,418	362 70
Second Reader	2,334	420 12
Third Reader	1,592	302 48
Fourth Reader	928	222 72
Fifth Reader	609	146 16
Speller—One	3,473	486 22
Speller—Two	1,398	195 72
First Arithmetic	2,292	412 56
Advanced Arithmetic	1,364	313 72
New Lessons—One	1,341	308 43
New Lessons—Two	1,172	304 72
Introductory History	922	285 82
Brief History	1,136	465 76
Introductory Geography	1,565	500 80
Advanced Geography	1,202	649 08
Primer of Hygiene	765	137 70
Civics	741	229 71
Writing Book—One	1,284	51 36
Writing Book—Two	1,199	47 96
Writing Book—Three	810	32 40
Writing Book—Four	725	29 00
Writing Book—Five	367	14 68
Old Lessons—One	21	1 68
Old Lessons—Two	518	57 36
Old Fourth Readers	70	13 20
Totals	32,766	$6,370 06

SCHOOL BOOKS IN WAREHOUSE.

June 30, 1916.

Name	Old	New
Primer	7,299	57,900
First Reader	19,164	59,100
Second Reader	12,626	60,000
Third Reader	22,734	----------
Fourth Reader	9,090	----------
Fifth Reader	15,676	----------
Speller—One	30,074	----------
Speller—Two	24,185	----------
First Arithmetic	31,772	----------
Advanced Arithmetic	21,255	----------
New Lessons—One	25,070	----------
New Lessons—Two	18,269	----------
Introductory History	5,823	----------
Brief History	30,471	----------
Introductory Geography	44,536	----------
Advanced Geography	34,420	----------
Primer of Hygiene	17,253	----------
Civics	23,992	----------
Writing Book—One	2,381	50,100
Writing Book—Two	2,898	69,900
Writing Book—Three	2,291	69,400
Writing Book—Four	2,912	65,700
Writing Book—Five	3,319	60,600
Writing Book—Six	----------	50,400
Writing Book—Seven	----------	50,100
Writing Book—Eight	----------	50,100
Totals	407,510	643,300

SCHOOL BOOK COST.

The table below shows the school books completed each month during 1915 and 1916. The figures were made according to the cost finding records and bills rendered to the State Board of Education at these prices.

Quantity	Description	Total manufacturing cost	Book average
	MAY, 1915.		
25,900	Writing Book No. 3	$635 23	$0.0245
25,000	Writing Book No. 2	627 52	.0251
25,600	Writing Book No. 4	633 68	.0248
	JUNE, 1915.		
25,200	First Book Arithmetic	$2,518 36	$0.10
25,200	Book One—English Lessons	3,205 74	.1272
25,200	First Readers	1,874 23	.0744
	JULY, 1915.		
25,300	English Lessons—Book Two	$3,403 55	$0.1345
	SEPTEMBER, 1915.		
25,000	Writing Book One	$634 38	$0.0254
25,200	Third Readers	2,658 48	.1055
	OCTOBER, 1915.		
3,125	Writing Book One	$2,090 98	$0.0271
17,943	Writing Book Two		
23,468	Writing Book Three		
13,772	Writing Book Four		
18,839	Writing Book Five		
77,147	Writing Books		
25,040	Advanced Geography	8,082 06	.323
	NOVEMBER, 1915.		
25,232	Introductory Geography	$4,791 12	$0.19
	JANUARY, 1916.		
5,001	Constitution of California	$827 33	$0.166
25,015	Advanced Arithmetic	3,014 91	.1205
10,050	Speller Book One	889 67	.088
3,700	Writing Book One	543 28	.03
2,868	Writing Book Two		
4,245	Writing Book Three		
3,440	Writing Book Four		
4,000	Writing Book Five		
18,253	Writing Books		
25,300	Advanced Geography and Supplement	8,026 79	.317
	FEBRUARY, 1916.		
25,035	First Book Arithmetic	$2,441 62	$0.0975
25,040	Speller Book One	2,187 62	.088
15,070	Speller Book Two	1,301 79	.087
	MARCH, 1916.		
25,295	Brief History	$5,112 22	$0.2023
25,200	Introductory Geography	4,689 58	.1861
	APRIL, 1916.		
57,900	Primers (New Book)	$5,168 13	$0.0893
	MAY, 1916.		
60,000	Second Readers (New Book)	$6,195 67	$0.1033
59,100	First Readers (New Book)	5,337 53	.091
	JUNE, 1916.		
70,100	Copy Book One (New series)	$4,194 56	$0.00855
69,900	Copy Book Two (New series)		
69,400	Copy Book Three (New series)		
65,700	Copy Book Four (New series)		
60,600	Copy Book Five (New series)		
50,400	Copy Book Six (New series)		
52,000	Copy Book Seven (New series)		
52,600	Copy Book Eight (New series)		
490,700	Books in all		

INCREASED COST OF MATERIAL.

The increased costs of paper and other material, not affecting us materially during our annual contracts of July, 1915, to June, 1916, will add to the future cost of manufacture until the market again reaches a normal state. A year ago we were buying book paper for $.04215; this has increased to $.1125 or possibly over 200 per cent at the lowest carload rates. Other "war prices" at the present date have placed an increase of 20 per cent on binders cloth; 50 per cent on tar-board; 50 per cent on ink and 350 per cent on kraft lining paper. As these advances on material are general over the country, our low comparative costs of manufacture will probably remain about the same.

The following table will be of interest in this connection, showing the trade name of each of the California books with its publisher, and the price at which it is delivered to the children of other states by the publisher:

EQUIVALENT OF CALIFORNIA STATE BOOKS IN 1915-16.

Original name of book	Publisher	Publisher's list price
Aldine Primer	Newson & Co.	$0 32*
Progressive Road to Reading	Silver, Burdett & Co.	32*
Brooks Second Reader	American Book Co.	35*
Brooks Third Reader	American Book Co.	40
Stepping Stones to Literature (Fourth)	Silver, Burdett & Co.	60
Stepping Stones to Literature (Fifth)	Silver, Burdett & Co.	60
Chancellors Spellers—Book I	Macmillan Co.	25
Chancellors Spellers—Book II	Macmillan Co.	30
McClymonds & Jones Elementary Arithmetic	American Book Co.	35
McClymonds & Jones Essentials in Arithmetic	American Book Co.	60
Guide Books to English—Book I	Silver, Burdett & Co.	45
Guide Books to English—Book II	Silver, Burdett & Co.	60
Thomas Introductory History	D. C. Heath & Co.	65*
McMasters Brief History of the United States	American Book Co.	1 00
Tarr & McMurrays Introductory Geography	Macmillan Co.	60
Tarr & McMurrays Advanced Geography	Macmillan Co.	1 00
Dunns Community and the Citizen	D. C. Heath & Co.	75
Spencer Sons Writing Book I	American Book Co.	05*
Spencer Sons Writing Book II	American Book Co.	05
Spencer Sons Writing Book III	American Book Co.	05
Spencer Sons Writing Book IV	American Book Co.	05
Spencer Sons Writing Book V	American Book Co.	05
Primer of Hygiene	World Book Co.	40
Total		$9 79

*These books will be changed and enlarged in the 1916–17 editions, and three new readers and three copy books added to series.

BOOKS DISTRIBUTED, SOLD AND ROYALTIES PAID.

Sixty-seventh Fiscal Year, 1915-16.

Name	Distributed, sold	Royalty paid	Amount
Primer	17,169	$0.048	$824 11
First Reader	15,096	.048	724 59
Second Reader	17,364	.525	911 61
Third Reader	12,485	.06	749 10
Fourth Reader	11,069	.09	996 21
Fifth Reader	10,691	.09	962 19
Speller—One	31,785	.025	784 62
Speller—Two	20,446	.025	511 15
First Arithmetic	29,225	.0525	1,534 31
Advanced Arithmetic	23,926	.09	2,153 34
English Lessons—One	16,097	.0675	1,086 55
English Lessons—Two	16,878	.09	1,519 02
Introductory History	10,848	.15	1,627 20
Brief History	16,796	.15	2,519 40
Introductory Geography	21,254	.09	1,912 86
Advanced Geography	23,910	.15	3,586 50
Primer of Hygiene	11,985	.06	719 10
Civics	9,722	.125	1,215 24
Writing Book—One	42,653	.01	426 53
Writing Book—Two	41,846	.01	418 46
Writing Book—Three	44,209	.01	442 09
Writing Book—Four	41,121	.01	411 21
Writing Book—Five	37,552	.01	375 52
English Lessons—One (old)	21	.08	1 68
English Lessons—Two (old)	518	.12	62 16
Fourth Readers (old)	70	.12	8 40
Totals	524,736		$26,493 15

DEPARTMENT OF STATE PRINTING.

Manufacturing Economy in Output Aside From School Books.

Department	State Printing Office labor hours expended last fiscal year	Commercial costs, at United States average*	State Printing Office comparative cost
Hand composition	21,132	$32,331 96	$24,301 80
Linotype composition	27,248	53,133 60	36,784 80
Platen presses	8,340	7,339 20	6,672 00
Cylinder presses	19,231	42,115 89	25,000 30
Cutting machines	4,946	5,885 74	4,946 00
Ruling machines	4,871	6,088 75	5,358 10
Folding machines	4,710	6,641 10	3,768 00
Other work		10,000 00	6,705 24
Totals		$163,536 24	$113,536 24
Saved to state			$50,000 00

*Average of comparative costs of larger cities of country, obtained by Employing Printers' Associations of America, and based on a general lower wage scale than paid in this state.

STOCK ACCOUNT BALANCES.

Kind of stock	On hand June 30, 1915	Purchases and adjustments	1915-16 sales	June 30, 1916, balance
Ledger paper	$1,733 38	$5,760 93	$4,853 93	$2,640 38
Book paper	9,956 92	24,864 05	28,498 20	6,322 77
Tags	27 59	43 44	23 43	47 60
Envelopes	1,251 65	5,858 45	5,724 45	1,385 65
Bond paper	2,606 66	10,977 67	10,306 08	2,378 25
Manila paper	676 53	1,602 23	1,803 42	475 34
Linen paper	894 48	11 58	54 87	851 19
Cover paper	594 35	1,727 21	1,731 92	589 64
Miscellaneous papers	301 25	1,051 60	872 05	480 80
Flat paper	1,258 70	4,902 08	3,919 80	2,240 98
Cardboard	803 38	2,095 14	2,352 05	546 17
Improved stock	272 09	392 70	157 56	507 23
Totals	$20,376 98	$58,387 08	$60,297 76	$18,466 30
Rubber stamp stock		293 93	77 83	216 10
Textbook paper	20,573 09	23,343 34	23,411 12	20,505 31
Ink stock	153 92	1,311 53	1,083 58	381 87
Bindery stock	16,146 35	21,251 05	14,734 67	22,662 73
Totals	$57,250 34	$104,586 93	$99,604 96	$62,232 31

NOTE.—Difference between "Purchases" shown on this exhibit, and the list of purchases, consist of adjustments in stock.

GENERAL STOCK PURCHASES.

ENVELOPES.

10,150	3 3/16 x 8¾	$37 55
34,500	6¼ Saxon bond envelopes, L.F.	51 75
20,000	6¾ Saxon bond envelopes, L.F.	36 40
13,000	10 Saxon bond envelopes, L.F.	39 65
150,000	6¼ white rag envelopes	144 00
1,012,500	6¾ white rag envelopes	1,032 75
20,000	7 white rag envelopes	24 00
35,000	9 white rag envelopes	52 50
1,004,000	10 white rag envelopes	1,746 96
10,000	11 white rag envelopes	21 40
10,000	12 white rag envelopes	23 50
5,000	14 white rag envelopes	12 85
20,000	10 postage saver envelopes	55 80
30,000	6¾ window envelopes	36 00
50,000	10 window envelopes	109 50
35,000	9 manila envelopes	31 50
125,000	10 manila envelopes	121 25
1,000	10 XXXX manila envelopes	3 25
10,000	11 manila envelopes	13 60
50,000	6½ x 9½ XXXX jute manila O. E. envelopes	167 75
240,000	50-lb. 6½ x 9½ O. E envelopes	391 20
10,000	50-lb. No. 3 7 x 10 open end envelopes	19 00
5,000	Columbian clasp env., No. 30	16 73
10,000	Columbian clasp env., No. 40	35 36
15,000	Columbian clasp env., No. 63	67 32
45,000	Columbian clasp env., No. 65	214 20
15,000	Columbian clasp env., No. 68	$73 44
40,000	Columbian clasp env., No. 70	201 28
45,000	Columbian clasp env., No. 75	238 68
47,000	Columbian clasp env., No. 90	313 21
3,000	Columbian clasp env., No. 93	21 95
8,000	Columbian clasp env., No. 95	59 19
5,000	Columbian clasp env., No. 97	37 80
45,000	No. 6¾ Brother Jonathan bond envelopes, R.F.	67 50
50,000	No. 6¾ Brother Jonathan bond envelopes, R.F.	77 50
30,000	No. 10 Brother Jonathan bond envelopes, R.F.	90 00
3,000	No. 12 Brother Jonathan bond envelopes, R.F.	10 50
5,000	4⅜ x 10¼ white O. E. thumb cut envelopes	19 00
3,000	6 x 9—50 white O. E. envelopes	5 52
10,000	50–3 manila coin envelopes	5 50
10,000	50–4½ manila coin envelopes	5 80
3,000	36-lb. O. E. manila envelopes, 4⅞ x 7¼	4 20
1,000	No. 11 cloth lined envelopes	14 50
1,000	No. 14 cloth lined envelopes	18 80
10,200	No. 9 20-lb. Titan bond env.	30 60
500	11½ x 14½ O. E. 50-lb. manila	4 25
		$5,804 49

BOOK PAPER.

15	reams brief, 22 x 29, 60 lb.	$50 85
100	reams M. F., 28 x 42, 60-lb.	236 10
3,666	1 /13 M. F., 38 x 50, 96-lb.	13,848 88
510	9/20 S. & S. C., 25 x 38, 65-lb.	1,405 14
100¼	S. & S. C., 28½ x 50, 98-lb.	416 07
1,513½	S. & S. C., 38 x 50, 130-lb.	8,332 59
13½	egg shell, 25 x 38, 60-lb.	52 65
20	egg shell, 25 x 38, 80-lb.	$103 92
20	cameo, 25 x 38, 75-lb.	146 25
535	sheets news, 26 x 40, 39-lb.	1 24
50	reams white rough lining, 25 x 38, 60-lb.	194 70
4½	reams rag offset, 28 x 42, 80-lb.	45 05
		$24,833 44

GENERAL STOCK PURCHASES—Continued.

COVER PAPER.

7 reams Practical, blue, 29 x 45, 64-lb.	$58 24	7⅜ reams Cameo Sepia, 130-lb.	$104 50
35 reams Manuscript wove, 18 x 31, 40-lb.	196 00	33 reams S. & S. C., 50-lb.	90 75
2 reams Potomac, crash finish, 60-lb.	15 00	25 reams S. & S. C., 65-lb.	90 74
44 reams Buckeye, 80-lb.	288 64	10 reams S. & S. C., 65-lb.	35 75
2½ reams Buckeye, 100-lb.	20 50	147¼ Buckeye cover, 65-lb., colors	784 85
			$1,684 97

CARD BOARD.

18,900 sheets 120-lb. white Bristol	$430 92	15,500 sheets 140-lb. index Bristol	$387 50
8,200 sheets 120-lb. colored Bristol	129 56	1,600 sheets 230-lb. index Bristol	64 00
16,000 sheets 140-lb. white Bristol	425 60	2,200 sheets 3-ply green check	50 60
4,000 sheets 100-lb. white Bristol	73 60	700 sheets 3-ply tough check, asstd.	16 10
20,000 sheets 120-lb. tag board	172 32	500 sheets 4-ply tough check, asstd.	15 00
500 sheets 140-lb. tag board	5 03	100 sheets 4-ply R. R. board, yellow	2 05
11,500 sheets 120-lb. No. 1 tag board	213 90	100 sheets 6-ply R. R. board, asstd.	2 75
500 sheets 320-lb. No. 1 tag board	24 80		
			$2,013 73

BOND PAPERS.

30 reams l. w. Jackson, 17 x 22, 10-lb.	$41 70	20 reams Good Grade, 25 x 38, 48-lb.	$96 00
65 reams l. w. Jackson, 17 x 28, 12-lb.	108 42	70 reams Amer. Trust, 17 x 28, 16-lb.	140 00
225 reams Bro. Jonathan, 17 x 28, 16-lb.	720 00	114 reams Amer. Trust, 17 x 28, 20-lb.	228 00
20 reams Bro. Jonathan, 17 x 28, 24-lb.	76 80	90 reams Amer. Trust, 17 x 28, 20-lb.	190 00
205 reams Bro. Jonathan, 22 x 34, 40-lb.	1,312 00	70 reams Amer. Trust, 17 x 28, 20-lb.	140 00
30 reams Saxon, 22 x 34, 40-lb.	225 00	334 reams Amer. Trust, 22 x 34, 40-lb.	1,336 00
40 reams Map, 28 x 44, 40-lb.	240 00	75 reams Amer. Trust, 25 x 38, 40-lb.	300 00
60 reams Crane's, 17 x 22, No. 21	538 20	30 reams Amer. Tr., 22 x 34, 32-lb., gr.	96 00
80 reams Crane's, 17 x 22, No. 25	828 00	80 reams Amer. Tr., 22 x 34, 32-lb., pk.	256 00
5 reams Crane's, 17 x 28, No. 21	51 75	89¾ reams Amer. Trust, 22 x 34, 32-lb.	287 20
8 reams Crane's, 17 x 28, No. 25	99 36	499 reams Amer. Trust, 22 x 34, 32-lb.	1,596 80
5 reams Crane's, 19 x 24, No. 25	58 65	165 reams Amer. Trust, 22 x 34, 32-lb.	528 00
128 reams Library, 17 x 28, 20-lb., col.	170 24	12 reams Bank Bond, 22 x 34, 32-lb.	42 24
105 reams Trust Bond, 17 x 28, 24-lb.	252 00		
10 reams Gray Trust Bond	32 00		$9,990 36

FLAT PAPER.

42 reams colored, 17 x 22, 16-lb.	$64 51	75 reams Hamburg, 17 x 28, 24-lb.	$105 30
217 reams colored, 17 x 22, 24-lb.	499 96	30 reams Hamburg, 17 x 28, 32-lb.	56 16
5 reams colored, 19 x 24, 28-lb.	13 44	30 reams Hamburg, 22 x 34, 36-lb.	63 17
20 reams colored, 17 x 28, 32-lb.	61 44	86 reams Hamburg, 22 x 34, 40-lb.	201 24
640 reams Oakland, 17 x 28, 28-lb.	1,361 92	50 reams Hamburg, 22 x 34, 48-lb.	140 40
190 reams Oakland, 17 x 28, 32-lb.	462 08	154½ reams R. R. Folder, robin's egg blue, 25 x 38, 60-lb.	500 67
20 reams Oakland, 22 x 34, 40-lb.	60 80	15 reams Pacific Coast, 22 x 34, 48-lb.	72 00
287 reams Oakland, 22 x 34, 48-lb.	1,046 98		
38 19/20 reams Oakland, 24 x 38, 56-lb.	165 68		
			$4,875 75

LEDGER PAPER.

20 reams Tisrite, 20 x 28, 54-lb.	$143 64	112 reams Mills, 21 x 32, 60-lb.	$1,304 89
5 reams Tisrite, blue, 20 x 28, 54-lb.	35 91	10 reams Mills, 24 x 38, 64-lb.	124 16
15 reams Tisrite, buff, 21 x 32, 56-lb.	111 72	9 1/10 reams Mills, 23 x 31, 72-lb.	127 02
13 reams Tisrite, blue, 21 x 32, 56-lb.	96 82	26 reams Mills, 23 x 36, 80-lb.	403 52
57½ reams Tisrite, 21 x 32, 60-lb.	462 01	5 reams Mills, 24 x 38, 88-lb.	85 36
2 reams Tisrite, blue, 21 x 32, 60-lb.	15 96	10¼ reams Scotch, 19 x 24, 44-lb.	106 72
50 reams Tisrite, 24 x 38, 64-lb.	425 60	12 6/10 reams Scotch, 20 x 58, 54-lb.	174 33
9 reams Tisrite, 23 x 36, 80-lb.	95 76	5 reams Scotch, 23 x 31, 72-lb.	99 83
2½ reams Tisrite, 19 x 24, 88-lb.	29 26	15 reams Scotch, 23 x 36, 80-lb.	299 51
132 reams Mills, 17 x 28, 40-lb.	1,020 92	5 reams Scotch, 24 x 38, 88-lb.	110 16
10 reams Mills, 19 x 24, 44-lb.	85 36	10 7/10 reams Reliance, 21 x 32, 60-lb.	89 88
5 reams Mills, buff, 24 x 28½, 52-lb.	50 44		
20 reams Mills, 20 x 28, 54-lb.	209 52		$5,708 30

MANILA PAPERS.

20-lb. yellow chemical, 17 x 28	47 04	32-lb. blue chemical, 22 x 34	$57 68
20-lb. yellow chemical, 19 x 24	19 60	56-lb. white chemical, 28 x 34	192 08
20-lb. blue chemical, 17 x 28	10 30	100-lb. manila paper, 40 x 48	95 82
24-lb. blue chemical, 17 x 28	30 58	150-lb. manila paper, 40 x 48	153 10
32-lb. blue chemical, 22 x 34	439 04	200-lb. jute manila, 36 x 48	469 20
32-lb. pink chemical, 22 x 34	41 20		
			$1,555 64

GENERAL STOCK PURCHASES—Continued.

SHIPPING TAGS.

No. 5-E manila tags	$6 75
No. 8E manila tags	5 40
No. 5-CX linen shippings	10 67
No. 6-CX linen shippings	$12 78
No.8-EC red and blue tags	7 50
	$43 10

MISCELLANEOUS.

Waste paper used on jobs, July 1, 1915, to June 30, 1916	$270 50
20,000 red gummed seals	27 00
60 reams gum paper, non-curling	204 00
27 reams safety paper, 17 x 28	168 75
3 reams green glaze paper, 20 x 25	10 50
360 sheets cloth lined paper, 24 x 36	34 20
25 reams French folio, 19 x 24	28 75
55 reams French folio, 17 x 22	112 20
75 reams French folio, glazed, No. 1, 17 x 22	69 38
15 reams onionskin, 17 x 22	$20 40
5 reams tissue, grass bleached, 20 x 30	6 75
5 reams mimeograph paper, 17 x 22, 16-lb.	23 60
17 sheets drawing paper, 27 x 40, 140-lb.	3 06
168 yards oil cloth, 54 inches wide	45 36
11 sheets genuine parchment, 17 x 22	7 43
	$1,031 88

RUBBER STAMP STOCK.

50	No. 3 handles	$0 25
50	No. 3½ handles	30
25	No. 4 handles	20
25	No. 5 handles	25
2	2 x 6 air cushion mounts, mort.	24
2	2 x 8 air cushion mounts, mort.	26
2	2 x 10 air cushion mounts, mort.	28
2	3 x 12 air cushion mounts, mort.	38
2	5 x 15 air cushion mounts, mort.	32
1	5 x 8 air cushion mount, mort.	20
1	5 x 10 air cushion mount, mort.	25
1	6 x 6 air cushion mount, mort.	19
2	1 x 6 air cushion mounts, mort.	22
2	1 x 8 air cushion mounts, mort.	26
2	1 x 10 air cushion mounts, mort.	28
2	1 x 12 air cushion mounts, motr.	30
2	1 x 14 air cushion mounts, mort.	32
2	2 x 6 air cushion mounts, mort.	24
2	2 x 8 air cushion mounts, mort.	26
2	2 x 10 air cushion mounts, mort.	28
2	2 x 12 air cushion mounts, mort.	32
2	2 x 14 air cushion mounts, mort.	34
2	3 x 6 air cushion mounts, mort.	28
2	3 x 8 air cushion mounts, mort.	30
2	3 x 10 air cushion mounts, mort.	36
2	3 x 12 air cushion mounts, mort.	38
2	3 x 14 air cushion mounts, mort.	44
2	4 x 6 air cushion mounts, mort.	30
2	4 x 8 air cushion mounts, mort.	36
2	4 x 10 air cushion mounts, mort.	42
2	4 x 12 air cushion mounts, mort.	48
2	4 x 14 air cushion mounts, mort.	54
505	pieces mountings	43 88
1 11/12	doz. solid rubber dates	2 39
10	air cushion time stamps	6 75
7	American time stamps	8 75
1	American check protector	1 75
1	dozen No. 1 Supreme ink pads	1 60
6	pair No. 1 banded pads	54
24	pair No. 2 banded pads	2 51
6	pair No. 3 banded pads	70
6	pair No. 4 banded pads	90
1	dozen ½-oz. bottles ink	50
1	dozen 1-oz. bottles ink	75
1	dozen 2-oz. bottles ink	1 45
30	2½-oz. cans quick drying ink	7 50
½	dozen 2-oz. q. d. bottle ink	88
3½	doz. bottles numbering mach. ink	11 33
1	dozen 1¼-oz. bottles Superb ink	1 00
2	No. 1½ Midget self-inkers	52
14	No. 2 Midget self-inkers	5 16
3	No. 3 Midget self-inkers	1 08
3	No. 4 Midget self-inkers	1 44
3	No. 4½ Midget self-inkers	$1 62
3	No. 5 Midget self-inkers	1 62
3	No. 6 Midget self-inkers	1 80
2	No. 1 Standard self-inkers	2 40
2	No. 1½ Standard self-inkers and extra bands	3 68
3	No. 2 Standard self-inkers and extra bands	4 80
3	No. 3 Standard self-inkers and extra bands	6 28
12	Royal band daters	40 83
2	No. 4 Standard self-inkers	8 00
2	No. 0 Standard band daters with die plates	4 50
2	No. 1 Standard band daters with die plates	5 20
2	No. 2 Standard band daters	6 00
2	No. 2 Midget band daters	2 85
3	No. 4 Midget band daters	3 30
3	No 5 Midget band daters	3 60
3	No. 6 Midget band daters and extra bands	5 45
12	No. 10 Midget line band dates	9 00
6	No. 4 Triumph band daters	8 40
2	B. B. type band daters	5 50
3	No. 25 Midget line daters	1 80
3	No. 40 Midget line daters	2 16
2	No. 1 Victor daters and plates	80
2	No. 1½ Victor daters and plates	80
2	No. 2 Victor daters and plates	1 00
36	No. 0 Pioneer daters	2 52
12	No. 2 Pioneer daters	1 32
8	Pioneer band numberers	88
4	2 x 6 Pioneer band numberers	64
3	No. 1 U. S. word printers	90
3	No. 2 U. S. word printers	1 50
2	No. 1-2 Simplex band daters	1 60
2	No. 2-6 U. S. band numberers	50
2	No. 3-6 U. S. band numberers	1 44
16	Supreme self-inking stamp pads	1 70
16	"D" Supreme s. i. stamp pads	2 10
16	"E" Supreme s. i. stamp pads	3 55
12	"O" Supreme s. i. stamp pads	80
12	Special Supreme pads	90
12	No. 1 Supreme pads	1 15
12	No. 2 Supreme pads	1 45
12	No. 3 Supreme pads	2 30
	Rubber stamp rubber	19 77
	Sponge rubber	4 36
1	set bands	33
1	dozen No. 2 air cushion pockets	90
3	No. 1 Hercules pocket stamps	75
		$293 93

GENERAL STOCK PURCHASES—Continued.

INK PURCHASES.

70	lbs. policy black, at 30 cents	$21 00
85	lbs. job black, at 30 cents	25 50
1,250	lbs. books, at 12 cents	150 00
2,762	lbs. halftone book, at 22½ cents	621 45
500	lbs. extra halftone black, at 40c	200 00
20	lbs. medium brown, at 65 cents	13 00
5	lbs. light photo brown, at 65 cts.	3 25
5	lbs. light green, at 40 cents	2 00
10	lbs. medium silk green, at 40 cents	4 00
10	lbs. dark silk green, at 30 cents	3 00
5	lbs. olive green, at 30 cents	1 50
8	lbs. vermillion, at 30 cents	2 40
70	lbs. rose lake, at 50 cents	35 00
40	lbs. scarlet lake, at 75 cents	30 00
55	lbs. blue lake, at 60 cents	33 00
85	lbs. orange, at 35 cents	29 75
60	lbs. lemon yellow, at 35 cents	21 00
65	lbs. special blue, at 30 cents	19 50
1	lb. special blue, at $2.50	2 50
5	lbs. geranium lake, at 30 cents	$1 50
5	lbs. antique red, at 30 cents	1 50
5	lbs. madder lake, at 30 cents	1 50
1	lb. tracing cloth black ink, at $2.00	2 00
10	lbs. white ink, at 25 cents	2 50
5	lbs. job purple, at 30 cents	1 50
3	lbs. copying red, at 30 cents	90
5	lbs. Miolore blue, at 30 cents	1 50
15	lbs. light brown, at 30 cents	4 50
6	bottles Inkoleum	1 48
85	lbs. Lakatine, at 17 cents	14 45
5	lbs. litharge, at 10 cents	50
30	gals. reducing varnish, at $1.00	30 00
20	gals. boiled linseed oil, at $1.05	21 00
3	lbs. oxychloride of manganese, at 45 cents	1 35
5	gals. japan dryer, at $1.00	7 50
		$1,311 53

BINDERY STOCK.

75	lbs. Manila hemp	$6 75
13	qts. LePage's liquid glue	7 51
175,000	free labels	23 15
420	yards head bands	20 08
81	3/10 packs gold leaf	587 43
11	19/20 packs Schlegel's gold leaf	50 79
2,530	eyelets	13 35
10	lbs. padding composition	1 40
10	sheets carbon paper	84
2	dozen glove buttons	70
380	lbs. water paste	31 92
1,527	lbs. hide glue	189 35
956	lbs. B. B. glue	85 08
2	dozen ruler brushes	6 68
629	lbs. Stecko paste	51 89
10	lbs. thread	12 00
10	lbs. thread	12 00
1	yd. blue silk	1 50
48	yds. tracing cloth	12 96
300	yds. gummed cloth, 1½ in. wide	2 25
300	yds. gummed cloth, 2 in. wide	3 00
80	yds. library buckram	20 58
1,145	yds. buckram	245 94
2,299¾	yds. white canvas	333 01
315¾	yds. Canton flannel	36 97
13,000	yds. grey super	422 50
61	yds. brown corduroy	36 60
70,763	yds. de luxe vellum	8,852 45
3,000	yds. T grain	375 30
5,989	yds. Rex vellum	749 22
16	yds. muslin	3 52
2,299¼	yds. muslin	147 15
3,858½	yds. Indian Head muslin	444 87
360	yds. T. P. cloth	60 95
400	yds. B. A. book cloth	85 72
44	yds. white oil cloth	10 78
2,580½	yds. water grain buffing	311 02
19	5/12 dozen XXXX bark skivers	291 25
1,000	library labels	12 04
10	dozen No. 1 Morocco slipts	41 15
27	assorted Morocco skins	42 23
541	feet black cowhide	97 38
3,115	feet red cowhide	747 60
216	skin heavy title leather	194 40
8	dozen title leather, assorted	86 40
25	spools 19 x 21½ wire	$17 75
25	spools 20 x 25 wire	17 75
198	spools No. 25 wire	128 70
27	spools No. 23 wire	17 55
184	bundles 27 x 32, 16-lb. tar board	193 66
80	bundles 26 x 38, 50-lb. pulp bd.	112 00
421	bundles 27 x 32, 20-lb. tar board	443 10
1	ton No. 15 Davy tar board	56 00
80	bundles No. 20 Davy tar board	112 00
32	bundles No. 30 Davy tar board	45 60
14	bundles No. 30 solid straw bd.	92 00
100	sheets No. 012 stencil board	6 75
100	sheets No. 020 stencil board	9 50
102½	sheets No. 030 stencil board	18 43
1,357	bundles No. 30 tar board	1,428 24
50	sheets 60-lb. brief paper	30
3,476	sheets 200-lb. jute manila	67 07
1,046	sheets 150-lb. jute manila	11 22
52	sheets 100-lb. jute manila	39
20	rms. common marble paper	84 00
20	rms. 25 x 38, 80-lb. white rough lining	103 84
428	rms. 24 x 36, 60-lb. Swedish Kraft	1,146 65
3,000	lbs. case back lining paper	215 00
96	sheets French grey cover	2 69
84	sheets news paper	30
6	metal Baker-Vawter 14-inch loose leaf binders	38 81
1	metal Baker-Vawter 12-inch covered metal binder	6 43
100	sets 3/16-inch parts	8 00
25	sectional part binder metals	19 00
115	sectional part binder metals	83 95
1	4-post binder	4 00
1,000	No. 3 stays	1 40
1	de luxe binder	6 56
120	lbs. B.B. gloss ink	88 80
5	lbs. B. B. brown ink	3 70
5	lbs. B. B. orange ink	3 70
11	appropriation ledged binders	50 30
1	stock ledger	4 82
1	500-page minute book	11 00
		$19,430 62

GENERAL STOCK PURCHASES—Continued.

IMPROVED STOCK.

(Printed and ruled after purchase.)

1,800 sheets register of warrants paid (county system)	$29 86
1,800 sheets register of warrants drawn (county system)	29 86
1,800 sheets register of deposit permits (county system)	29 86
1,800 sheets register of department collection reports (county system)	29 86
1,800 sheets register of school warrants drawn (county system)	29 86
1,800 sheets register of expenditure vouchers (county system)	29 86
1,800 sheets register of refund vouchers	29 86
2,600 sheets fund ledger (county system)	42 11
1,800 sheets general ledger (county system)	24 36
1,800 sheets journal (county system)	16 57
6,200 claim blanks (short)	16 60
4,185 claim blanks (long)	12 97
1,000 cash received sheets	15 00
4,205 sheets check register	61 25
	$398 88

SCHOOL BOOK PAPER PURCHASES, 1915-1916.

303 11/20 reams S. & S. C. 31 x 42, 80-lb.	$1,023 57
3,500 9/10 reams S. & S. C. 31 x 46, 90-lb.	13,299 63
342 reams S. & S. C. 33 x 55½, 110-lb.	1,586 38
925½ reams S. & S. C. 31 x 46, 110-lb.	4,290 85
61½ reams French gray cover, 33 x 38, 160-lb.	592 32
754 bundles tar board, 23 x 31½, No. 30	793 59
	$21,586 34

RECAPITULATION.

Inventory of Stock and Material on Hand June 30, 1916.

Paper stock	$18,466 30
Bindery stock	22,662 73
Textbook stock	20,505 31
Ink stock	381 87
Rubber stamp stock	216 10
	$62,232 31

INVENTORY OF STOCK ON HAND JUNE 30, 1916.

ENVELOPES.

9,475	No. 6¼ Saxon bond, L. F.	$14 21
5,250	No. 6¾ Saxon bond	9 55
3,890	No. 10 Saxon bond	11 85
750	No. 5 white wove	56
32,000	No. 6¼ white wove	30 72
78,239	No. 6¾ white wove	79 77
21,500	No. 7 white wove	25 99
8,250	No. 8 white wove	11 55
16,690	No. 9 white	24 62
40,835	No. 10 white	71 06
2,924	No. 11 white	6 46
8,997	No. 12 white	21 32
8,365	No. 14 white	21 95
14,975	No. 6¾ window	17 97
19,500	No. 10 window	42 70
12,000	No. 6¼ Manila	7 08
10,450	No. 6¾ Manila	6 58
11,000	No: 9 Manila	10 00
20,045	Manila 10-770	19 44
15,000	Manila 11-770	20 14
9,900	Manila 4½-50	5 22
3,250	Manila No. 12	4 55
3,000	Manila No. 14-50	4 80
26,400	O. E. Manila No. 50, 6½ x 9½	43 01
4,000	catalogue Manila No. 3, 7 x 10	7 60
5,650	Col. clasp Manila No. 5	17 66
3,250	Col. clasp No. 15	10 28
3,800	Col. clasp No. 20	12 56
5,350	Col. clasp No. 30	18 15
3,200	Col. clasp No. 35	11 50
10,750	Col. clasp No. 40	39 46
5,750	Col. clasp No. 50	24 10
1,106	Col. clasp No. 55	4 77
6,450	Col. clasp No. 60	30 13
4,500	Col. clasp No. 63	20 00
2,939	Col. clasp No. 65	12 62
5,800	Col. clasp No. 68	28 40
15,270	Col. clasp No. 70	76 84
12,880	Col. clasp No. 75	68 42
3,923	Col. clasp No. 80	$24 57
11,258	Col. clasp No. 90	74 86
4,820	Col. clasp No. 93	37 28
3,990	Col. clasp No. 95	28 85
1,500	Col. clasp No. 97	11 33
4,705	white Bank bond, 6¾	7 59
8,500	white Bank bond, 6¾ 20-lb.	15 30
1,000	Old Veda bond No. 10, 20-lb.	2 64
8,150	National Bank bond No. 11	22 41
33,440	Bro. Jno. bond No. 6¼	50 05
8,000	Bro. Jno. bond No. 6¾, 20-lb.	12 39
10,375	Bro. Jno. bond No. 10	31 12
2,500	Bro. Jno. bond L. F. No. 6¼	4 67
500	Bro. Jno. bond No. 10	1 79
4,190	Bro. Jno. bond No. 11	17 81
3,250	Alexis bond No. 6¾	7 02
1,000	Alexis bond No. 10	5 00
6,442	O. E. thumb, white, 4⅜ x 10¼	23 78
500	O. E. extra royal XX	1 23
500	No. 3 coin	75
125	O. E. cloth lined thumb, 4¼ x 9⅞	2 18
475	amber laid No. 6¾	57
400	baronial No. 5	50
400	wide imperial	88
1,125	baronial No. 7	2 41
4,500	blue laid No. 6¾	7 45
4,500	Sterling linen No. 6¼	23 65
750	Marseilles linen No. 6¼	2 17
680	cloth lined No. 14	12 78
3,000	Bro. Jno. bond eps. No. 12	10 50
1,000	XXX Imp. Pchmt., white, No. 6¾	4 00
9,375	XXX Imp. Pchmt., white, No. 6	28 13
620	P. L. S. Med. linen eps No. 6	1 86
3,168	No. 16 Hickory bond eps. No. 6¼, blue	7 92
646	No. 20 Hickory bond eps. No. 6¼	1 62
10,000	Manila coin eps. 50-3	5 00
		$1,385 65

IMPROVED STOCK.

Sheets.		
1,575	register of warrants paid	$26 13
1,575	register of warrants drawn	26 13
1,575	register of deposit permits	26 13
1,575	register of dept. col. rpts.	26 13
1,575	register of school warrants	26 13
1,575	register of expenditure voucher	26 13
1,575	register of refund voucher	26 13
2,375	register of fund ledger	39 38
1,575	register of co. acct. sheets	21 32
1,575	register of co. acct. jour. sheets	14 50
1,336	register of stock ledger sheets	23 00
6,599	register of stock ledger sheets	86 87
348	ledger sheets approp. record	8 74
390	17 x 28, 32-lb. Pac. Coast flat	3 63
265	Legis. chief clerk memo. blanks	1 99
Sheets.		
208	17x22, 32-lb. Old Hempstead bond	$2 50
1,378	bill heads, 28-lb. Oakland	11 31
312	17 x 28, 32-lb. Stand. flat bill hds.	3 02
940	claims blanks, short	2 45
2,136	claim blanks, long	6 69
500	ruled blanks, commercial	3 97
1,000	ruled blanks, legal	11 44
1,942	ruled blanks, legal	16 80
595	stockholders' record book	13 99
1,475	17 x 22, 20-lb. Ardmore linen	13 57
250	17 x 22, 18-lb. Imp. Pchmt., linen	2 87
750	ruled letter blanks	9 38
885	cash received sheets	13 27
1,403	check register sheets	13 63
		$507 23

INVENTORY OF STOCK ON HAND JUNE 30, 1916—Continued.

LEDGER PAPER.

Sheets.		
3,768	54-lb. Tisrite, 20 x 28	$54 08
2,500	54-lb. Tisrite, 20 x 28	35 91
5,329	56-lb. buff Tisrite, 21 x 32	79 38
2,672	56-lb. blue Tisrite, 21 x 32	39 81
1,077	60-lb. white, 21 x 32	17 25
14,709	64-lb. Tisrite, 24 x 38	250 30
753	80-lb. Tisrite, 23 x 36	16 02
1,250	88-lb. Tisrite, 19 x 24	29 26
9,441	40-lb. Mills ledger, 17 x 28	146 46
273	44-lb. Mills ledger, 19 x 24	4 50
2,225	52-lb. buff Mills ledger, 24 x28	44 89
4,865	54-lb. Mills ledger, 20 x 28	101 93
37,500	60-lb. Mills ledger, 21 x 32	873 01
3,052	72-lb. Mills ledger, 23 x 31	86 83
6,319	80-lb. Mills ledger, 23 x 36	196 12
2,500	88-lb. Mills ledger, 24 x 38	85 36
3,085	44-lb. Scotch ledger, 19 x 24	68 59
3,765	54-lb. Scotch ledger, 20 x 28	103 74
1,513	72-lb. Scotch ledger, 23 x 31	60 42

Sheets.		
2,848	80-lb. Scotch ledger, 23 x 36	$113 69
1,700	88-lb. Scotch ledger, 24 x38	75 01
438	64-lb. Reliance ledger, 24 x 38	7 86
955	40-lb. Reliance ledger, 17 x 28	10 72
532	44-lb. Reliance ledger, 19 x 24	6 53
1,102	54-lb. Reliance ledger, 20 x 28	16 66
1,033	60-lb. Reliance ledger, 22 x 34	17 35
144	80-lb. Reliance ledger, 23 x 36	3 45
584	88-lb. Reliance ledger, 24 x 38	14 42
1,629	88-lb. Reliance ledger, 19 x 48	40 13
820	20-lb. Brown's ledger, 16 x 21	12 81
23	44-lb. Brown's ledger, 19 x 24	79
43	64-lb. Brown's ledger, 24 x 38	2 15
206	40-lb. Weston ledger, 18 x 23	6 44
26	80-lb. Weston ledger, 23 x 36	1 62
291	88-lb. Crocker ledger, 24 x 38	14 60
17	28-lb. Brown's ledger, 16 x 21	37
66	36-lb. Weston ledger, 18 x 23	1 92
		$2,640 38

LINEN PAPER.

7,500 sheets 17 x 22, 20-lb. Ardmore	$54 00
2,000 sheets 19 x 24, 24-lb. Savoy	14 40
10,368 sheets 17 x 22, 18-lb. Imp. Parch.	93 32
80 sheets 17 x 22, 20-lb. Imp. Parch.	80
1,255 sheets 19 x 24, 24-lb. Imp. Parch.	15 06

5,153 sheets 17 x 28, 28-lb. Imp. Parch.	$72 15
14,755 sheets 22 x 34, 32-lb. Imp. Parch.	236 08
7,643 sheets 22 x 34, 40-lb. Imp. Parch.	152 86
8,855 sheets 24 x 38, 48-lb. Imp. Parch.	212 52
	$851 19

MISCELLANEOUS.

9,975 sheets No. 24 gummed seals, red	$13 47
9,288 sheets 17 x 22 noncurl gum paper	57 11
682 sheets 20 x 25 gum. paper No. 608	5 46
1,652 sheets 20 x 25 noncurl gum paper	16 52
8,553 sheets 17 x 28 safety paper	106 93
364 sheets 17 x 28 Nat. safety paper	4 61
536 sheets 20 x 25 green glaze paper	3 75
6,524 sheets 20 x 24 glazed paper	32 62
905 sheets 19 x 24 blot. paper, 120-lb.	15 55
13,886 sheets 19 x 24 No. 1 French folio tissue paper	32 70
14,806 sheets 17 x 22 Fr. folio onionskin	60 41
3,180 sheets 22 x 34 No. 1 French folio	12 72
19,547 sheets 17 x 22 No. 1 Fr. fol. glaz'd	36 15

5,238 sheets 17 x 22 No. 11 glazed and unglazed and onionskin	$21 41
1,996 sheets 20 x 30 grass bleach. tissue (silver)	5 38
1,005 sheets 20 x 30 No. 1 white tissue paper	1 18
30,000 sheets 8½ x 11 mimeograph paper	18 69
480 sheets 17 x 22 No. 16 wh. mimeograph paper	1 13
	$445 79
Two 400-page blank books	15 56
Two 600-page long form record books	19 45
	$480 80

BOOK PAPER.

Sheets.		
4,195	21 x 29, 60-lb. brief paper	$26 81
71,926	25 x 38, 48-lb. M. F. paper	268 19
16,410	28 x 42, 60-lb. M. F. paper	77 49
235,525	38 x 50, 96-lb. M. F. paper	1,779 44
463,207	25 x 38, 65-lb. S. & S. C.	2,709 84
50,125	28½ x 50, 98-lb. S. & S. C.	416 07
16,055	22 x 40, 60-lb. eggshell book	120 41
365	25 x 38, 80-lb. coated book	5 26

Sheets.		
31,350	25 x 38, 100-lb. coated book	$743 94
2,045	25 x 38, 65-lb. eggshell book	15 69
6,848	25 x 38, 80-lb. eggshell book	71 15
1,410	25 x 38, 60-lb. laid book paper	16 92
2,250	28 x 42, 80-lb. coated book	32 40
2,000	28 x 42, 100-lb. coated book	36 00
216	75-lb. Cameo book	3 16
		$6,322 77

MANILA PAPERS.

11,252 sheets yellow chem., 17 x 28, 20-lb.	$22 05
75 sheets yellow chem., 19 x 24, 20-lb.	15
363 sheets blue chem., 17 x 28, 20-lb.	73
1,025 sheets yellow chem., 17 x 28, 24-lb.	2 41
16,845 sheets yellow chem., 22 x 34, 32-lb.	53 92
2,740 sheets pink chem., 22 x 34, 32-lb.	19 04
4,200 sheets blue chem., 22 x 34, 32-lb.	13 81

11,020 sheets pink chem., 22 x 34, 40-lb.	$46 72
38,165 sheets white chem., 28 x 34, 56-lb.	209 80
967 sheets Manila 40 x 48, 100-lb.	7 15
6,500 sheets Manila 40 x 48, 150-lb.	62 72
3,484 sheets jute Manila, 200-lb., 36 x 48	46 84
	$475 34

SHIPPING TAGS.

6,100 sheets Manila ship. tags No. 4 G-D	$3 66
8,475 sheets No. 5-E shipping tags	5 72
4,000 sheets No. 6-E Manila ship. tags	2 89
4,975 sheets No. 6-G Manila ship. tags	2 46
1,000 sheets No. 7-E tags	90

3,000 sheets No. 8-E tags	$3 24
3,975 sheets No. 5-C X linen shippings	8 48
5,975 sheets No. 6-C X linen ship. tags	15 28
3,975 sheets No. 8-E C red and blue tags	4 97
	$47 60

INVENTORY OF STOCK ON HAND JUNE 30, 1916—Continued.

FLAT PAPER.

16,462 sheets 17 x 22, 16-lb. colored flat	$50 55
43,620 sheets 17 x 22, 24-lb. colored flat	200 60
10,110 sheets 19 x 24, 28-lb. colored flat	58 18
2,945 sheets 17 x 28, 32-lb. Kingston	18 64
15,506 sheets 17 x 28, 32-lb. colored	98 64
48 sheets 17 x 28, 24-lb. Oakland	18
281,215 sheets 17 x 28, 28-lb. Oakland	1,196 84
12,420 sheets 17 x 28, 32-lb. Oakland	60 55
5,992 sheets 22 x 34, 40-lb. Oakland	35 98
6,202 sheets 22 x 34, 48-lb. Oakland	44 49
6,962 sheets 24 x 38, 56-lb. Oakland	58 74
1,626 sheets 17 x 28, 20-lb. Hamburg	4 06
6,622 sheets 17 x 28, 24-lb. Hamburg	18 61
9,691 sheets 17 x 28, 32-lb. Hamburg	$36 28
8,684 sheets 22 x 34, 36-lb. Hamburg	35 76
10,999 sheets 22 x 34, 40-lb. Hamburg	51 48
5,456 sheets 22 x 34, 48-lb. Hamburg	30 64
30,346 cheets 25 x 38, 60-lb. R. R. folder	196 65
1,442 sheets 17 x 28, 40-lb. Eureka	10 66
1 sheet 22 x 34, 48-lb. Palo Alto	03
65 sheets 22 x 34, 36-lb. flat Royal Mills	98
1,151 sheets 17 x 22, 28-lb. Standard	7 76
2,571 sheets 22 x 34, 48-lb. Pac. Coast	24 68
	$2,240 98

COVER PAPER.

595 sheets 17 x 31, 37-lb. Manuscript	$11 30
1,630 sheets 18 x 31, 40-lb. Manuscript	32 60
6,734 sheets 18 x 31, 40-lb. M. S. wove	73 34
123 sheets 20 x 25, 60-lb. Kermes	1 92
341 sheets 60-lb. Potomac, crash fin.	5 11
18,362 sheets 20 x 25, 65-lb. Buckeye	195 53
10,819 sheets 22 x 28½, 80-lb. Buckeye	141 94
500 sheets 22½ x 28½, 80-lb. Buckeye, nile green	7 19
12 sheets 22½ x 28½, 90-lb. Antique Princess	32
3,415 sheets 20 x 25, 35-lb. S. & S. C.	$15 71
14,798 sheets 20 x 25, 50-lb. S. & S. C.	80 70
400 sheets 22 x 28, 60-lb. S. & S. C.	3 84
255 sheets 20 x 25, 65-lb. S. & S. C.	1 82
40 sheets 20 x 25, 60-lb. Wawona	61
466 sheets 20 x 25, 65-lb. Old Cloister	15 84
17 sheets 20 x 25, 60-lb. Middlesex	13
138 sheets 22 x 28½, 75-lb. Middlesex, green and grays	1 74
	$519 64

CARD BOARDS.

255 sheets 120-lb. white Bristol	$5 85
581 sheets 120-lb. colored Bristol	57 01
818 sheets 140-lb. white Bristol	21 69
556 sheets 100-lb. white Bristol	9 57
150 sheets 100-lb. tag board	2 10
60 sheets 110-lb. tag board	62
500 sheets 140-lb. tag board	5 03
908 sheets 180-lb. tag board	11 79
912 sheets 120-lb. No. 1 tag board	12 62
40 sheets 320-lb. No. 1 tag board	1 98
139 sheets 120-lb. index Bristol	4 67
3,823 sheets 140-lb. index Bristol	95 05
406 sheets 140-lb. Acme Bristol	12 03
508 sheets 220-lb. Acme Bristol	26 82
949 sheets 230-lb. index Bristol	$38 54
121 sheets 3-ply tough check	3 75
255 sheets 3-ply green check	5 87
1,174 sheets 3-ply tough check, assort.	26 95
330 sheets 3½-ply tough check, assort.	14 85
571 sheets 4-ply tough check assort.	17 21
100 sheets 4-ply R. R. board, yellow	2 05
1,452 sheets 6-ply R. R. board, assort.	35 18
746 sheets 8-ply Comet blanks	19 32
407 sheets China board, asst. colors	12 21
658 sheets 4510-E guides, blue, ⅛ ends	5 92
358 sheets 4510-E guides, buff 3ds C.	3 22
11,463 sheets 35-E size 2 stock rec. Cds.	94 57
	$546 47

BOND PAPER.

136 sheets 17 x 22, 10-lb. Jackson	$0 37
10,705 sheets 17 x 28, 12-lb. Jackson	35 67
1,008 sheets 17 x 28, 20-lb. Columbian	2 81
2,691 sheets 17 x 28, 16-lb. Agawam	15 45
11,111 sheets 17 x 28 16-lb. Bro. Jno.	71 12
5,000 sheets 8½ x 11, 16-lb. Bro. Jno.	9 15
9,176 sheets 17 x 28, 24-lb. Bro. Jno.	70 48
12,792 sheets 22 x 34, 40-lb. Bro. Jno.	164 02
3 sheets 22 x 34,, 40-lb. l. f. Success	04
3,128 sheets 22 x 34, 40-lb. h. gd. Saxon	46 93
4,198 sheets 28 x 44, 40-lb. white map	50 38
7,049 sheets 17 x 22, 20-lb. Crane's	126 47
7,281 sheets 17 x 22, 25-lb. Crane's	150 74
2,346 sheets 17 x 28, 21-lb. Crane's	48 71
200 sheets 17 x 28, 21-lb. Crane's, pink	4 08
1,303 sheets 19 x 24, 21-lb. Crane's	27 36
4,000 sheets 17 x 28, 25-lb. Crane's	99 36
2,870 sheets 19 x 24, 25-lb. Crane's	67 04
109 sheets 17 x 22, 20-lb. Hickory, blue	79
135 sheets 17 x 22, 24-lb. Hickory, wh.	1 48
4,373 sheets 17 x 28, 20-lb. Library bd.	4 34
3 sheets 17 x 28, 24-lb. Panama-Pac.	01
155 sheets 19 x 24, 21-lb. Strathmore	1 49
1,150 sheets 19 x 24, 20-lb. Stand., opal.	6 90
362 sheets 17 x 28, 20-lb. Roman	2 72
238 sheets 19 x 24, 20-lb. Reliance	$1 14
566 sheets 17 x 28, 20-lb. Reliance	2 71
465 sheets 17 x 22, 20-lb. Reliance	2 23
1,136 sheets 17 x 22, 16-lb. Reliance	4 36
2,530 sheets 17 x 22, 20-lb. Manu., wh.	6 48
460 sheets 17 x 22, 20-lb. Alexis. white	3 31
58 sheets 17 x 22, 16-lb. Community, buff	21
3,453 sheets 17 x 28, 24-lb. Community, green	33 15
58 sheets 17 x 28, 21-lb. Strathmore, white	73
20 sheets 17 x 28, 24-lb. Coupon	23
8,690 sheets 17 x 28, 16-lb. Good Grade	34 76
50,968 sheets 17 x 28, 20-lb. Good Grade	245 18
5,802 sheets 17 x 28, 24-lb. Good Grade	27 83
76,059 sheets 22 x 34, 32-lb. Good Grade	493 50
41,566 sheets 25 x 38, 40-lb. Good Grade, 22 x 34, 24 x 38	354 41
6,000 sheets 25 x 38, 48-lb. Good Grade	57 60
8,400 sheets 25 x 38, 50-lb. Bank	92 40
612 sheets 20-lb. Fairfield Parch.	7 34
190 sheets 17 x 22, 28-lb. Tilenan extra super	2 87
	$2,378 25

INVENTORY OF STOCK ON HAND JUNE 30, 1916—Continued.

SCHOOL BOOK PAPER.

430	sheets 27 x 33, 64-lb. flat Royal	$5 80
518,700	sheets 31 x 42, 80-lb. textbook	3,559 75
1,991,703	sheets 31 x 46, 90-lb. textbook	15,152 77
12,500	sheets 34 x 51, 100-lb. textbook	108 00
3,825	sheets 31 x 46, 110-lb. textbook	35 47
98	sheets 33 x 38, 160-lb. French grey cover	$1 88
58,630	sheets 27 x 33, 120-lb. French grey cover	1,641 64
		$20,505 31

Inventory of Material in Bindery Department.

167	bundles No. 16, 27 x 33 tar board	$175 77
35	bundles No. 20 tar board	36 84
26	bundles No. 25 tar board	31 20
1,219	bundles No. 30 tar board	1,270 81
26	bundles No. 15 Davy tar board	36 40
64	bundles No. 20 Davy tar board	89 60
24	bundles No. 25 Davy tar board	34 20
37½	bundles No. 30 Davy tar board	53 44
60	bundles No. 20 straw board	66 75
9	bundles No. 30 straw board	9 00
11	bundles 50-lb., 26 x 38 pulp board	17 60
104	sheets stencil board No. 012	7 02
110	sheets stencil board No. 020	10 45
43	sheets stencil board No. 030	7 74
121	pounds binder's ink	89 54
1	500-page minute book	11 00
1	100-page check register	21 71
3½	reams marble paper, fancy	41 65
10	reams marble paper, common	42 00
4	reams chocolate paper	16 00
4,278	sheets 80-lb., 25 x 38 white rough lining paper	44 42
17	reams 60-lb., 24 x 36 Swedish Kraft paper	45 98
378	reams 63-lb., 23 x 40 Swedish Kraft paper	1,012 10
1	sheet 120-lb. French gray cover paper	02
9,370	sheets 150-lb. rag lining paper	63 08
2,350	pounds case back lining paper	187 95
48	stockholders' record books, 52-page	43 22
94	stockholders' record books, 26-page	53 76
4	sets 14″ Baker-Vawter binder metal	25 85
1	set 12″ Baker-Vawter binder metal	6 43
55	sets rubber knobs	1 45
193	sets 3/16″ posts (4 sections each)	15 70
111	sets O. K. metals, 6 and 9 inch	79 92
61	section post metals, 19 and 22 inch, 16 and 17 inch	45 53
1	corduroy covered 4-post binder	4 00
3	appropriation ledger binders	13 93
6	stock ledger binders, canvas	24 34
7	stock ledger binders, corduroy	34 10
41	skin water grain buffing	122 59
1,678¾	feet boarded grain buffings	218 23
53	skin bark skivers	66 25
1	skin heavy lining skivers	1 50
1	lot library labels	25 35
31¼	skin morocco splits	41 25
115½	morocco skins, assorted colors	288 75
34	feet morocco skins, assorted colors	8 50
15	morocco skins, black No. 1	22 50
129	feet black cowhides	23 22
22¼	skins Oasis morocco	32 43
96	skins dressed roan leather	120 00
56	skins undressed roan leather	70 00
2,143¾	feet red cowhide	514 50
186½	skin title leather	167 85
365	spools wire	237 25
	Lot black stay binding	57 05
	Lot Portland guards	20 69
7½	quarts glue	4 43
1,045	yards head band	31 35
48	packages gold leaf	347 04
28,500	eyelets	11 40
23	glove buttons	67
380	pounds cold water paste	31 92

INVENTORY OF STOCK ON HAND JUNE 30, 1916—Continued.

1,527	pounds hide glue	$189 35
956	pounds bookbinder's glue	85 08
24	ruler brushes	6 68
629	pounds Steko paste	51 89
20	pounds F8 thread	24 00
44	yards 54″ white oil cloth	10 78
200	yards binder's cloth, TP85	33 86
160	yards binder's cloth, P75	27 09
357	yards binder's cloth, BA81	76 51
140	yards blue silk cloth	30 00
11½	yards tracing cloth	3 09
155	rolls assorted binder cloth	1,224 50
14	rolls imported buckram	700 00
2,240	yards buckram, assorted	418 15
20	yards peter cloth	2 70
414½	yards German cambric	37 30
291	yards canton flannel	34 92
9,360	yards grey super	304 20
61	yards corduroy	36 60
2,374½	yards canvas, assorted	356 18
5,095½	yards muslin	326 11
1,545¾	yards Indianhead muslin	173 90
2,400	yards vellum cloth, XT light blue	304 80
947	yards vellum cloth, special red	120 27
3,838	yards vellum XT72 cloth, gray green	496 22
1,053	yards vellum XT70 cloth	133 73
1,019	yards vellum XT68 cloth, reader green	129 41
5.282	yards vellum XT34 cloth, olive brown	726 28
3,836	yards vellum XT22 cloth, dun	487 17
2,887	yards vellum XT17 cloth, dark green	361 16
8,605	yards vellum T38 cloth, red	1,076 49
5,900	yards vellum T43 cloth, blue	738 09
27,290	yards vellum T15 cloth, light brown	3,413 98
5,989	yards vellum T36 cloth, olive green	749 22
138	rolls Old Civics cloth, brown	1,090 20
54	rolls Old History cloth, green	426 60
74	rolls Old Geography cloth, green	584 60
252	rolls Old History cloth, grey	1,436 40
		$22,662 73

Inks—Press Room.

6	lbs. job white	$1 50	2	lbs. trichromatic yellow	$3 00
28	lbs. policy black	8 40	2	lbs. O. C. manganese	90
11	lbs. job black	3 30	6½	lbs. Miolore blue	1 95
5	lbs. bond black	1 50	4	lbs. ultra blue	1 20
23	lbs. bond and job black	6 90	1	lb. light olive green	30
698	lbs. halftone black	157 05	5	lbs. dark silk green	2 00
23	lbs. scarlet lake	17 25	5	lbs. dark French green	1 50
5	lbs. geranium	1 50	5	lbs. medium green	1 50
5	lbs. madder	1 50	5	lbs. job purple	1 50
20	lbs. rose	10 00	5	lbs. antique red	1 50
2	lbs. chromatic red	4 00	25	lbs. blue lake	15 00
1	lb. vermilion, printing	30	5	lbs. orange yellow	2 00
2	lbs. red copying ink	60	30	lbs. litho lemon yellow	10 50
2	lbs. purple copying ink	1 00	15	lbs. orange lake	4 50
1	lb. blue copying ink	70	11	lbs. medium lemon yellow	3 85
5	lbs. brown lake ink	1 50	15	gals. No. 000 reducing varnish	15 00
15	lbs. medium photo brown ink	9 75	15	gals. boiled linseed oil	15 75
14	lbs. light brown ink	4 20	5	pints Inkoleum reducer	1 25
25	lbs. Lakatine	4 25	3	lbs. rich gold bronze	3 00
5	lbs. Magic reducer compound	1 25	5	gals. japan dryer	7 50
5	lbs. litharge color	50		Miscellaneous lot of broken cans,	
2	lbs. trichromatic blue	3 00		various colors	44 22
2	lbs. trichromatic red	4 00			
					$381 87

INVENTORY OF STOCK ON HAND JUNE 30, 1916—Concluded.

Inventory of Rubber Stamp Stock.

1	lot of handles	$0 70
2	air cushioned mounts, 2 x 6	24
2	air cushioned mounts, 2 x 8	26
2	air cushioned mounts, 2 x 10	28
1	air cushioned mount, 3 x 12	19
1	air cushioned mount, 5 x 15	16
1	air cushioned mount, 5 x 8	20
1	air cushioned mount, 5 x 10	25
1	air cushioned mount, 6 x 6	19
1	air cushioned mount, 1 x 6	22
2	air cushioned mounts, 1 x 8	26
2	air cushioned mounts, 1 x 10	28
2	air cushioned mounts, 1 x 12	30
2	air cushioned mounts, 1 x 14	32
2	air cushioned mounts, 2 x 6	24
1	air cushioned mount, 2 x 8	13
2	air cushioned mounts, 2 x 10	28
2	air cushioned mounts, 2 x 12	32
2	air cushioned mounts, 2 x 14	34
2	air cushioned mounts, 3 x 6	28
2	air cushioned mounts, 3 x 8	30
2	air cushioned mounts, 3 x 10	36
2	air cushioned mounts, 3 x 12	38
2	air cushioned mounts, 3 x 14	44
2	air cushioned mounts, 4 x 6	30
1	air cushioned mount, 4 x 8	18
2	air cushioned mounts, 4 x 10	42
2	air cushioned mounts, 4 x 12	48
2	air cushioned mounts, 4 x 14	54
441	miscellaneous mountings, grooved and round top	38 17
19	solid dates, rubber	1 95
7	air cushioned time stamps	4 50
6	American time stamps	7 50
1	American check protector	1 75
2	No. 1 Supreme ink pads	26
6	pair No. 1 banded pads	54
6	pair No. 2 banded pads	63
6	pair No. 3 banded pads	70
6	pair No. 4 banded pads	90
10	½-oz. bottles ink	41
7	1-oz. bottles ink	46
10	2-oz. bottles ink	1 21
16	2½-oz. cans quick drying ink	4 00
6	2-oz. q. d. bottles ink	88
28	bottles numbering machine ink	7 82
1	dozen 1¼-oz. bottles Superb ink	1 00
2	No. 1½ ordinary Midget self-inkers	52
11	No. 2 ordinary Midget self-inkers	4 02
3	No. 3 ordinary Midget self-inkers	1 08
2	No. 4 ordinary Midget self-inkers	96
3	No. 4½ ordinary Midget self-inkers	1 62
3	No. 5 ordinary Midget self-inkers	1 62
3	No. 6 ordinary Midget self-inkers	$1 80
2	No. 1 Standard self-inkers	2 40
2	No. 1½ Standard self-inkers	2 60
6	sets extra bands	1 08
3	No. 2 Standard self-inkers	4 80
2	No. 3 Standard self-inkers	5 20
3	sets extra bands for No. 3 Standard self-inker	1 08
6	Royal band daters, self-inkers	20 40
2	No. 4 Standard self-inkers	8 00
2	No. 0 Standard band daters (die plate)	4 50
2	No. 1 Standard band daters	5 20
2	No. 2 Standard band daters	6 00
3	No. 2 Midget band daters	2 85
1	No. 4 Midget band dater	1 10
2	No. 5 Midget band daters	2 40
4	sets extra bands and 5 No. 6 Midget band daters	4 70
6	No. 10 Midget line band daters	4 50
6	No. 4 Triumph band daters	8 40
2	No. 25 Midget line daters	1 20
2	No. 40 Midget line daters	1 44
2	No. 1 Victor daters, die plates	80
2	No. 1½ Victor daters, No. 2 plates	80
2	No. 2 Victor daters, No. 2 plates	1 00
29	No. 0, No. 1, No. 1½ Pioneer daters (line)	2 03
10	No. 2 Pioneer daters (line)	1 10
4	0-6 Pioneer numberers, band	44
4	1-6 Pioneer numberers, band	44
4	2-6 Pioneer band numberers	64
3	No. 1 W. S. word printers	90
3	No. 2 W. S. word printers	1 50
1	No. 1 and No. 2 Simplex band daters and plates	80
2	No. 2-6 U. S. band numberers	50
2	No. 3-6 U. S. band numberers	1 44
⅓	dozen C Sup. self-ink. stamp pads	40
1	dozen C Sup. self-ink. stamp pads	1 30
14	D Sup. self-inking stamp pads	1 85
14	E Sup. self-inking stamp pads	3 15
1	dozen No. 0 Supreme pads	80
1	dozen special Supreme pads	90
1	dozen Supreme pads	1 15
8	No. 2 Supreme pads	96
12	No. 3 Supreme pads	2 30
1	lot rubber stamp rubber	6 77
1	lot sponge rubber	1 74
12	No. 2 A. C. pockets	90
2	No. 1 Hercules pocket stamps	50
		$216 10

GENERAL INVENTORY.

January 1, 1916.

Buildings		$15,000 00
Composing room	$10,193 80	
Job room	7,025 62	
Linotype department	56,536 96	
Proof room	215 00	
		73,971 38
Bindery		42,560 05
Press room		31,860 05
Warehouse	$198 70	
Rubber stamp department	47 75	
Machine shop	9,461 10	
Commissary	152 91	
		9,860 46
Electrotype department (for sale)	$1,000 00	
Old material (for sale)	250 00	
		1,250 00
Office, Capitol	$994 95	
Office, plant	906 10	
Bill room, Capitol	600 00	
		2,501 05
Paper stock	$37,086 48	
Bindery stock	17,638 72	
Rubber stamp stock	161 51	
Printing ink	292 81	
Machine shop stock	59 35	
		55,238 87
		$232,241 86

STATE CAPITOL, SACRAMENTO, CALIFORNIA.

STATE PRINTING OF HIGH SCHOOL TEXTBOOKS.

Recommendation to Legislature, by the State Printer, that High School Books Should be Printed by State and Distributed Free to Pupils.

There are about 420,000 pupils in the eight grades of the elementary or grammar grades of the state, using books manufactured in the state plant and costing less than five dollars for the eight years. In the high schools there are approximately 75,000 students in the four grades using Eastern-made books, selected from a list of over half a thousand, and the cost per student is from $30 to $40, and additional for supplemental books. California state printing has shown a saving of over fifty per cent in cost (amounting to over $200,000 per year) on its grammar grade books, compared with the like texts in other states, and the same can be done with its high school books, with a saving of over $100,000 annually.

In every line of manufacture some standardization is essential for economy, and it would be impractical for the state to attempt to print the books under the methods followed at the present time. Uniformity, as far as possible, should be compulsory, not alone from the standpoint of economy in production, but also for other reasons. Is it right for the student to be set back in his studies when it is necessary to take up new texts in another district or county, and is it fair to force the parents to purchase some or all new books when a change of residence is made? There is little or no reason why there should be a difference between the school books of Humboldt County and those used in San Diego County, at least in the standard subjects of History, English, Algebra, etc. There can be only one best book, and this, I believe, could be selected to the best advantage of all the high schools of the state by a competent state board.

Of course, ''free textbooks'' are popular, and deservedly so, when we have so well proven the advantages with our grammar school system. But this success is largely, and I may say almost wholly, due to state publication, with free distribution. The plan advocated of free high school books, is good so far as it goes, and undoubtedly beneficial to the school children, but a plan of greater scope should be considered, and the welfare of the parents and taxpayers dealt with also.

When the question of free elementary textbooks was before the legislature half a dozen years ago, arguments quite similar to those now raised against improving the high school book system were advanced. Also at that time it was found necessary to enact a law prohibiting any change in texts more often than once in four years. Among those who now oppose uniformity in high school books, can be found those who fought free elementary textbooks at that time.

If a county is to be the unit for uniformity in the free distribution of high school books, the taxpayers of each county will pay their direct cost. If it is possible to standardize in a county, why not in the state as a whole? Without entering into any argument upon our tax system, I only point out that state revenues are mostly derived from a corporation tax, and city and county taxation based on assessments upon its own citizens. State printing and distribution cost could be borne by the state as a whole; county or district distribution would very likely be borne by these units.

In the ''old days,'' before California learned that progress in its government meant economy and efficiency, school books and plates were purchased largely upon the solicitation of the book trust agents, without regard for uniformity or time of book service. The question arises in my mind, with the 288 high school districts in the state, whether there would not be a tendency to drift into even a greater variety of high school texts than prevails today.

Even under our successful system of state-printed books for the grammar schools, there are in many districts a number of ''supplemental'' books; these are being forced in to the exclusion of the state product. From the ''library funds'' of the various school districts nearly $100,000 was spent last year for additional or ''supplementary'' textbooks. This, I believe, is an effort to disorganize our school book system. The state has a large printing plant of its own, capable of doing all this work at less cost, and if the present books are inadequate in size or number, the series can and should be enlarged.

It is impossible to present in a short article the complete details upon state printing and free distribution of all the textbooks, but I believe that every objection can be readily overcome, especially with the cooperation of the teaching fraternity. The statement is made that state printing of books for the high schools is not possible; as Superintendent of the State Printing office, I believe it is feasible and practical if we can have reasonable uniformity. It may be true that certain books, especially in the ''dead'' languages or subjects, the number of students would not justify our handling them. But my argument is that the books upon the general subjects would be of sufficient quantity to economically print them in this state.

The whole question evolves itself about the question of a reasonable uniformity in texts upon like subjects. I can see no good reason why, for the welfare of the school children and the benefit of the taxpayers, there should be an unlimited diversity in the high school textbooks.

The theory of free textbooks is based, not upon their being produced or distributed without cost, but upon the most equitable method of distributing the cost of this meritorious and beneficial plan. When we are considering ''free'' distribution of the high school books we should keep in mind that the cost must be considered, and it is with this thought that I am advocating the most economical plan which, fortunately, includes home production.

Respectfully submitted.

ROBERT L. TELFER.

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EIGHTH BIENNIAL REPORT

OF THE

STATE VETERINARIAN

OF

CALIFORNIA

FOR THE TWO YEARS ENDING JUNE 30, 1916

ALSO

Report of Tuberculin Testing of Dairy Herds under the Provisions of the State Dairy Law, Chapter 742, 1915, from October 1, 1916 to December 31, 1916

CHARLES KEANE	State Veterinarian
WARD B. ROWLAND	Assistant State Veterinarian
J. P. IVERSON	Deputy State Veterinarian
FRED H. GULDAGER	Deputy State Veterinarian
A. R. ASBILL	Deputy State Veterinarian
A. L. O'BANION	Deputy State Veterinarian
JOHN S. HAY	Deputy State Veterinarian
O. W. KERR	Deputy State Veterinarian
W. KADY	Clerk
M. R. SMITH	Assistant Clerk

28176

LETTER OF TRANSMITTAL.

January 9, 1917.

To His Excellency, HIRAM W. JOHNSON,
Governor of California.

SIR: I have the honor to submit herewith the eighth biennial report of this department showing briefly the work accomplished during the last two fiscal years. The transmission of this report has been purposely delayed in order that some data concerning tuberculin testing of dairy herds as conducted under the provisions of Chapter 742, Statutes 1915, effective October 1, 1916, could be submitted. This data, which covers a period of three months, will be found in the last pages of this report.

Very respectfully,

CHARLES KEANE,
State Veterinarian.

REPORT OF THE STATE VETERINARIAN.

To outline in detail the work that has been carried on by this department for the past two years would be absolutely impossible, inasmuch as a considerable part of our time is engaged in many investigations, no one of which in itself presents anything of importance to report, but in the aggregate they consume much time and attention. For this reason we will follow our custom at the end of previous biennial periods, and outline in as brief and concise manner as possible the more important endeavors that have received attention by this department in the past two years.

The personnel of this department, excluding tuberculin testing inspectors, is as follows:

A state veterinarian with office in Sacramento, an assistant state veterinarian, stationed in Pasadena, and three field deputies who are qualified veterinarians. In addition, during certain seasons of the year, lay inspectors are employed who are engaged in inspecting and dipping sheep for the eradication of scabies.

The work of this department is constantly on the increase, and the demands for its services greatly exceed the resources. This can be readily understood with a little reflection. The live stock industry of this state, including as it does the raising of cattle, sheep and hogs for food and by-products, the breeding and use of mules and various classes of horses, in addition to our ever-increasing dairy industry, classified together as one industry, is perhaps the greatest in this state. With increased values of recent years, and the general dissemination of knowledge that many of the diseases of live stock, which in previous years were considered fatal, can now be prevented and cured, it can readily be understood why the calls on this department have rapidly increased. Unfortunately, it is often physically and financially impossible to respond to all of such calls and we must, under such circumstances, select the most important for immediate attention.

The Department of State Veterinarian is charged with the control and eradication of communicable diseases of live stock within the state, the supervision of shipments of animals into the state in order to prevent the introduction of disease, and in cooperation with other states supervise the inspection of live stock shipped out of California in accordance with the laws at point of destination. This latter work is done by practicing veterinarians who have been officially authorized by this department.

FOOT AND MOUTH DISEASE OUTBREAK.

Probably the most outstanding feature in connection with live stock sanitation that occurred in the last biennial period was the serious outbreak of foot and mouth disease that started in Michigan, and in a surprisingly short time spread over a large area in the United States, including twenty-two states. For a time it appeared that the great live stock industry of all western states was threatened. New areas of infection were found almost daily, and at that time no part of the middle western and eastern sections of the country could be considered free from the disease. Consequently, it became necessary for California, in company with other western states, to establish quarantines against the live stock of the middle western and eastern states. The wisdom of such a procedure might be judged from the fact that this disease did not spread to the west. I do not, of course, minimize in the least the great work of the Bureau of Animal Industry, United States Department of Agriculture, and the authorities in the infected states, in controlling and eradicating this plague in the face of almost insurmountable difficulties, but what I wish to imply is, that, without the cooperative, rigid enforcement of the quarantines of western states there would have been many opportunities for the disease being transmitted to western live stock.

IMPORTATION OF ANIMALS.

The law providing for the inspection of animals prior to shipment into this state was amended during the last session of the legislature to provide that animals accompanying emigrant outfits should be exempt from such inspection. This was in accordance with our recommendations, and I am pleased to state removed what in many instances formerly proved to be a very serious and expensive hardship to emigrants coming into California.

The law providing for the inspection of animals before shipment into California, which is similar in all essentials to laws in effect in nearly all the other states, is not working out in a very satisfactory manner. Unfortunately, the weak point in such laws is the inability of proper enforcement. For instance, in all states these laws provide that dairy and breeding cattle, before being shipped from points of origin, must pass inspection and tuberculin testing by a veterinarian who has been authorized to do this work by the state veterinarian. In most states all, or a large percentage of the practicing veterinarians are authorized to do this work, and the shipper bears the expense, as a rule. In such tuberculin testing of cattle gross irregularities and frauds are constantly being perpetrated, and it has been our experience that the laws in question afford very little protection to the live stock industry.

Unfortunately, it would be inadvisable for California to repeal this law unless the other states would do likewise.

HEMORRHAGIC SEPTICEMIA.

During the last biennial period we undertook the investigation of a cattle disease that has been the cause of serious losses in Sierra, Lassen and Siskiyou counties. This disease has many of the characteristics of the affection known as hemorrhagic septicemia and a tentative diagnosis as such was established. However, technical knowledge and data concerning hemorrhagic septicemia is very unsatisfactory and somewhat vague, consequently in the absence of laboratory facilities, which are absolutely necessary in the conduct of pathological investigations, the results have not been satisfactory. In the conduct of this investigation Dr. Karl F. Meyer, of the George Williams Hooper Foundation for Medical Research, University of California, has very unselfishly cooperated with us in conducting laboratory examinations, and making hemorrhagic septicemia vaccines when his time would permit, and it gives us pleasure in acknowledging his valuable services. A similar disease apparently exists among cattle of neighboring states and elsewhere in the United States. I am taking the liberty of publishing in this report two papers, one by Dr. Meyer and the other by Dr. J. P. Iverson, deputy state veterinarian, in relation to this disease. As will be noted in these papers many cattle were vaccinated with hemorrhagic septicemia vaccine prepared by Dr. Meyer in order, first, to control the affection, and, second, as one means of determining the cause.

In all, 1,264 head of cattle were vaccinated on eight ranches, leaving 1,770 head to serve as controls. Both vaccinated and unvaccinated cattle were subjected to the same exposure and lived under identical conditions. The results of such vaccinations were very unpromising, as far as producing immunity to this disease is concerned, as more vaccinated than unvaccinated cattle died, as out of the 1,264 head of vaccinated cattle 27 died while only 11 of the 1,770 head of unvaccinated cattle died. These tests afforded some light, however, inasmuch as a number of cattle which were vaccinated in April, 1916, were again vaccinated in August of the same year. Following the first vaccination, well marked local reactions were observed in nearly all vaccinated cattle, as well as more or less marked systemic reactions in a few of them. When these same cattle were again vaccinated in August no local or systemic reactions followed. This data might indicate that hemorrhagic septicemia is not, at least, the primary cause of the trouble, and we have grave suspicions that some condition in the forage might be primarily responsible. Our investigations to determine the cause and afford relief will be continued.

HEMORRHAGIC SEPTICEMIA.

By Dr. J. P. Iverson, Deputy State Veterinarian.

During recent years hemorrhagic septicemia has received the attention of the live stock industry and sanitary officials in this country to an extent not formerly noticed, owing to the fact that from a few outbreaks in one or two states the disease has recently been reported in many states embracing territory from the Pacific to the Atlantic Ocean.

Instead of being an obscure and little to be considered disease we have become alive to the fact that it is a most important one, and its widespread appearance testifies that either it has gone unrecognized in many districts, being classified as some other disease, or the spread of it has insidiously progressed to finally attain such proportions as to demand special attention.

It is very evident that much is at present unknown, and there is something still to learn concerning the cause, distribution and other characteristics of this disease. We feel, however, that some progress must be admitted in determining its existence and being recognized as the cause of extensive losses which formerly were attributed to poisonous plants, anthrax and other infections.

For several years past reports of deaths among cattle were occasionally received by the State Veterinarian from some of the northern and eastern mountain counties of this state. The reports emanated from certain districts and in general, the history and symptoms were obscure, throwing but little light on the nature of the disease.

These reports were received from stock owners and they intimated that anthrax existed or was suspected. This belief was encouraged and stimulated by statements or diagnoses rendered by itinerant veterinary surgeons and in several instances by qualified veterinarians who vaccinated numbers of cattle against anthrax. As a result vaccination was rather extensively practiced in one community where hemorrhagic septicemia was causing the losses.

Whenever possible with his meager facilities, the State Veterinarian detailed inspectors to investigate, but as a rule, until last year, the results were unsatisfactory. Telegrams reporting deaths of cattle would be received at the office, but when the inspector arrived on the ground carcasses as a rule were decomposed, and unfortunately for us no more material was available to work with. Last year, however, we determined to thoroughly investigate at all costs, and the writer was detailed to remain in one infected locality long enough to conduct a thorough field investigation.

The little work that was done in former years rather made us suspicious of hemorrhagic septicemia, and we were also enabled thereby to exclude anthrax.

During 1914 and 1915 deaths occurred sporadically in Sierra and Siskiyou counties, where I spent considerable time. However, I was enabled to examine quite a few sick cattle and also hold many autopsies.

Symptoms in affected animals in many instances go unobserved as its course is very acute and death usually occurs in from 24 to 48 hours. Occasionally, however, animals recover, but I estimate mortality to be at least 90 per cent.

The passage of blood-tinged urine is a constant symptom, even in milder cases. Liquid feces, bile stained or containing clotted blood is also a very constant symptom and ofttimes the affected animal passes what appears to be pure clots of blood. Fever may or may not be present. The respirations are rapid and markedly abdominal. The animal is stupid and depressed and is not inclined to move about. All ages and classes of cattle are susceptible. We have observed the disease in cattle from five months up, including bulls, cows and steers, in both dairy and beef types.

Another most constant symptom is a very noticeable grunt when the animal is compelled to move, denoting, in my opinion, the great pain caused by movement when the pleura, peritoneum and organs are so intensely inflamed. The ante-mortem lesions, however, are not so distinct or definite but what they may be confused with other ailments, especially anthrax.

On autopsy in a well developed case, your attention is immediately attracted after opening the body cavities, to the intense hemorrhagic inflammation of either peritoneum or pleura, or both, and the similar condition of some of the contained organs. Areas of hemorrhagic inflammation are found in the intestines, even to involvement of the entire gastro-intestinal tract, the most constant seat of which is the duodenal loop. Here the wall is found greatly thickened and jelly-like and all the coats involved.

Another lesion that I invariably found was a large infarct in the liver. This is irregularly shaped, anemic, showing well in contrast with the adjacent liver substance. These infarcts vary in size from a quarter dollar to the palm of a hand and even larger, and can be observed on the surface of the affected liver. Blood-tinged urine is invariably found in the bladder.

Pericarditis is often present, and the examination of the heart muscle reveals petechiæ, particularly in the auriclar region.

The spleen is usually normal and could not well be mistaken for an anthrax spleen. On the capsule small hemorrhages are often noticed. Other lesions, such as inflammatory areas in the trachea, petechiæ on the larynx and a hemorrhage, gelatinous exudate surrounding the caudal mediastinal lymphatic are often found.

While field investigations indicated hemorrhagic septicemia, diagnosis was withheld until we could obtain laboratory confirmation.

Dr. K. F. Meyer of the George Williams Hooper Foundation for Medical Research, University of California, who, fortunately for us, has had previous experience with hemorrhagic septicemia in Pennsylvania and Europe, very kindly consented to cooperate with our department and specimens were forwarded to him for laboratory examinations. These specimens arrived at the laboratory in from 24 to 30 hours after death of the animal. The material forwarded consisted mainly of sections from the liver infarcts, regional lymphatic glands and sections of spleens. In a few cases we were able to freeze the material and it arrived at the laboratory before thawing. Great difficulty was experienced by Dr. Meyer in finding organisms of any kind from some of this material, but in other material the typical bipolar organism was isolated following rabbit inoculation. In other material submitted organisms of different variety were observed.

The difficulties of this work and the perseverance required can be better explained by Dr. Meyer.

STUDIES TO DIAGNOSE A FATAL DISEASE OF CATTLE IN THE MOUNTAINOUS REGIONS OF CALIFORNIA.

By Dr. Karl F. Meyer.

In 1913, Dr. Charles Keane, the State Veterinarian of California, asked the writer's cooperation in establishing the diagnosis of a fatal disease particularly prevalent in Sierraville, California.

From the description given, the malady corresponded in many respects with bovine hemorrhagic septicemia. No bacteriological evidence had, up to that date, been collected, the diagnosis having been simply anatomical. The experience which the writer had had in Pennsylvania in establishing conclusively the tentative diagnosis of hemorrhagic septicemia, which had been suggested by the late Leonard Pearson, made the problem, so generously offered, a very attractive one.

In 1913 two specimens from Siskiyou County were received in such a condition that a careful bacteriological examination, which was attempted, failed completely; only contaminating organisms of the cocci and coli groups were isolated.

In 1914 our attempts were more successful, and I was fortunate in autopsying one case of the disease in California and three cases in Nevada where, according to Dr. W. B. Mack, a disorder which is in many cases similar, if not identical, to the one in California, is causing severe losses in Carson and Sierra Valley.

Dr. J. P. Iverson, deputy state veterinarian of California, in a gratifying and untiring manner, autopsied a large number of animals and forwarded to me a number of specimens and cultures for laboratory study. Thus far, about ten different specimens from California have been examined. The conclusions which can be drawn from this material are instructive in many respects, and I select this opportunity to present same, not because they are in any way final, but because they will stimulate discussion and will encourage work along the same lines.

1. *Symptomatology of the disease*. It is difficult to observe diseased animals because the incipient symptoms are not very pronounced and they succumb to the disease in a very short time. In some cases, however, the most prominent symptom observed was the passage of blood-tinged urine which apparently contained even clotted blood. Liquid feces, with marked bile stain or coagulated blood, were passed. In some cases a hemorrhagic diarrhœa was very marked. In some retarded cases the feces were very hard, dark colored, and formed, covered with adherent mucus. The temperature in some of the cases which I observed was above normal, but not above 105 degrees. The respirations were rapid and markedly abdominal; the general behavior, depressed; the skin and hair, rough. In one case a local swelling on the metacarpal joint, with impaired locomotion, was noted.

The cattle are very frequently found dead without having shown any alarming symptoms. According to the stockmen, the animals will die in from three to four hours following the passing of blood-tinged urine.

I have the impression that the clinical diagnosis is impossible, and I have, therefore, concentrated my efforts on the post-morten findings which, however, were not conclusive.

2. *Anatomical findings*. There was a marked icterus; numerous petechiæ and hemorrhages were found in the subcutis. In some cases there was pronounced localized hemorrhagic edemas and exudation with enlargement of the subcutaneous lymph nodes.

The abdominal cavity contained either a small amount of yellowish fluid, or a large amount of well-clotted blood. The omentum, peritoneal lining and mesentery were well mottled with hemorrhages, and diffused areas of inhibition surrounded the larger blood vessels. The most prominent lesions were either in the duodenal loop and the adjacent portions of the liver, or in the liver alone. The wall of the duodenum was thickened, jelly-like and dark reddish, frequently covered with fresh fibrin meshes and adherent to the liver; the contents were bile-stained; the mucous membrane was slightly swollen and showed fine hemorrhages.

In the jejunum and colon there was either liquid, dark blood-like material, or bile-stained, slimy chymus, or dry, adherent, sticky contents. The regional lymph nodes were enlarged, soft and in some portions hemorrhagic. The mucous membrane of the abomasum showed occasionally petechiæ and a few erosions, or was also involved in the inflammatory reaction of the duodenum.

The liver was always enlarged, of a peculiar light-yellowish color and soft in consistence. In the middle and Spiegel's lobe there was a large, saffron-yellowish, irregularly-shaped area, friable and well defined, which on section imposed as a very large hemorrhagic infarct. The anemic necrotic tissue showed very distinctly several thrombosed blood vessels, mostly veins, occasionally arteries. The serous membrane of the gall bladder was also infiltrated and affected by the inflammatory reaction caused by the infarct. The portal lymph nodes were soft, enlarged and imbedded in a gelatinous mass. The presence of these hemorrhagic infarcts was recorded in every case of which I obtained material in 1914. Also, in specimens quite recently collected, in 1915, the infarct was present. The autopsies in Sierra and Siskiyou counties corresponded therein, in every respect.

Two cases autopsied by the writer in Nevada had similar lesions in the liver, but the process had, apparently, further advanced. In a two-year-old steer a large abscess was found in the middle of the liver. It would have been explained on the basis of a foreign body perforation, were it not that a second autopsy of a steer, which was killed and autopsied on the same day, offered a better interpretation of the process. In the latter animal a fibrous inflammation of the diaphragm, which had also incited by continuation of a similar inflammation in the right pleural cavity, covered a typical yellowish hemorrhagic infarct. The abscess in the first animal was, therefore, only the result of infarction and a prominent sign of the etiological identity of the processes.

The striking occurrence of the liver infarcts in the different localities has, in my judgment, a considerable bearing on the diagnosis.

The spleen was, in most of the cases, small; perhaps in some portions slightly enlarged and soft. On the capsule a few small or large hemorrhages were noted. The kidneys were dark brownish, spotted with punctiform hemorrhages, and in the medullary portion were diffusely reddish and streaked. The urine was always dark brownish and blood-tinged. The degree of hemoglobinuria varied with the different cases.

In the thoracic cavity a small amount of fluid was found in both pleural sacs. The pleura was smooth and stained with hemorrhages of varying sizes. In the lung parenchyma, small infarcts or diffuse lobular and lobar hepatization were noted. In a few cases, extensive inflammatory processes along the trachea, larynx and pharynx were recorded. The regional lymph nodes were correspondingly involved and hemorrhagic. The heart contained always well coagulated blood. The epi- and endo-card showed petechiæ, suggilations and hemorrhagic extravasations; the myo-card was turbid, flabby and soft.

Judging from the constancy of occurrence of the lesions, the etiological factor was predilective for the liver, lung, serous and mucous membranes.

Involuntarily I recalled the post-mortem findings of cases of hemorrhagic septicemia autopsied in Pennsylvania, and I expected to be able to prove, bacteriologically, in a very short time, the etiology of the above mentioned lesions. My late assistant, Dr. Crocker, and myself pointed out, in 1912, that the descriptions of the post-mortem findings as given in textbooks are incomplete, namely, in acute cases an apparent localization and filtration of the *Bacillus bovisepticus* takes place through the blood vessel system of the lung and liver. In such cases the bacterium is never found in the blood, but always in the infarcts and can from there be easily isolated in pure culture.

The extensive bacteriological examinations which were conducted with the material of about twelve cases (ten California cases) did not reveal such conclusive results and therefore need more detailed discussion.

3. *Bacteriological examination.* The pieces of organs were wrapped in cloth or muslin soaked in a weak bichloride solution, placed in Mason jars and forwarded on ice to the laboratory. In about eight cases, glucose broth was inoculated with blood material from the liver, lung and spleen. In most cases the cultures revealed the same organisms obtained otherwise, or they were found to be sterile (particularly the blood).

The microscopic study of the tissues did not reveal, in any case, bipolar organisms which could be diagnosed as *B. bovisepticus* without further isolation. Leishman or Giemsa stain was uniformly used for the demonstration. In the liver infarcts, spore bearing, Gram positive rods were found in every case, frequently associated with diplococci resembling pneumococci.

The ordinary culture methods gave no satisfactory answer as to the bacterial flora in the liver, lung infarcts and lymph nodes. Pieces of tissues immersed in glucose broth gave rise usually to the growth of anærobes or intestinal organisms, some of them staining bipolar, as everyone knows. We immediately used, therefore, the primary animal inoculation as a means of isolating the various organisms seen microscopically; experience had also taught us that the presence of the *B. bovisepticus,* when rare, is revealed only by their pathogenicity for rabbits or mice.

Always one or two rabbits, guinea pigs and mice were inoculated with emulsions (1: 2) of the liver infarcts, lymph nodes and spleen material. In this manner we obtained, from about twenty-five rabbits inoculated, two animals which had died from a typical bipolar infection. The material used on these animals came from a two-year-old heifer and a seven-months-old calf. In the first case, an emulsion of the hemorrhagic mesentery and, in the second case, lymph node material had been inoculated subcutaneously. The two rabbits succumbed to the infection in seven and five days, respectively. The bipolar organisms were found in the purulent fibrous exudate of the peritoneum and the heart-blood. Subsequent identification showed the comparatively low virulence of the isolated organisms for rabbits, which explains the long course of the disease following the inoculation and other points to which I shall refer later. The *B. bipolaris* isolated from these rabbits gives all the cultural identity reactions recognized as typical for the *B. bovisepticus.* Also the pathogenicity tests are characteristic, with the exception that, generally, large doses are required to cause a fatal result in laboratory animals. It is also pathogenic for calves by intravenous inoculation. Death resulted in a three-weeks-old calf following the injection of 3 cc. of a 20-hour-old broth culture of strain 22 (calf strain) in 22 hours. The two strains are identical and serologically protect against each other and also against *B. bipolaris septicus* strains which were obtained from varied sources in the United States.

The animals similarly inoculated with the same material, or with the organs of ten other cases, remained alive, or succumbed to various other infections which are particularly valuable because they weaken the above recorded positive findings of bipolar organisms in various respects.

(1) All the guinea pigs inoculated with the liver infarct material died from infections with anaerobes associated with *B. coli* and diplococci. The anaerobes resemble the *B. chauvei,* microscopically, because on the serous membranes of the infected animals they form only aggregations of pairs. Culturally and serologically they are, however, a type of pseudo malignant edema bacilli, which has not as yet been described and need further extensive study to be classified. These organisms are present in every case and in every infarct and, when the cadaver is not fresh, they are found in every organ. They were isolated from the California and Neveda cases, and they were, before death, in the diseased livers, because material removed immediately after death, in two calves, contained only these anaerobes in the liver infarcts. The organism is not pathogenic by subcutaneous application to calves, and is probably a secondary invader from the intestinal tract.

In our experience in Pennsylvania these anaerobes were also present, but less prominently, and in every instances the *B. bovisepticus* was also isolated without the slightest difficulty. We have thus far failed to repeat the condition in California.

(2) Some rabbits succumbed to infections with the *B. necrophorus,* probably due to contamination of the material. I may mention here that the anaerobic bacillus isolated from the infarcts is causing local necrosis and abscess formation, but never septicemia, in rabbits.

(3) Guinea pigs which succumbed to the infection with anaerobes frequently showed, in the blood and exudate, a diplococcus with a marked capsule indistinguishable from pneumococcus. The same organisms were found in some blood and liver cultures sent from three cases of the cattle disease, in the muscle smears of blackleg cases autopsied in the same localities, and in the pus from the two Nevada cases referred to above.

In our experience these organisms are secondary associates with numerous anaerobic organisms. Biologically they are closely related to the pneumococci. With pure cultures one produces on intravenous inoculation in calves a fatal septicemia, in rabbits local necrosis and septicemia, in guinea pigs necrosis and sepsis, and in mice local edema and septicemia.

These bacteria are doubtless not responsible for the cattle disease, but have some importance as secondary invaders. In some cases of typical blackleg the same organisms have been found and therefore they do not need further consideration.

(4) Most of the mice inoculated with lymph node, liver or spleen material, remained alive, or succumbed to the same anaerobic organisms as did the guinea pigs. The mice inoculated with the same material, which cause a *B. bovisepticus septicemia,* were sick for several days, but recovered; they were not immune to a subsequent injection with bipolar organisms.

As stated in detail, in two out of the twelve cases carefully tested, the primary animal inoculation furnished evidence which would support the anatomical diagnosis of hemorrhagic septicemia. The bacteriological study of the two strains (strains 10 and 22) suggests the view that the organisms were either present in small numbers only, or that they are exceedingly low in virulence for the laboratory animals. Our experience with hemorrhagic septicemia supports both conceptions and again brings forward the fact that the bacteriological diagnosis of hemorrhagic septicemia is not as easy a procedure as is generally considered. We read everywhere, and have doubtless also been taught, that the *B. bovisepticus* is very pathogenic for rabbits. Numerous investigators have shown that bipolar organisms can also be found in healthy animals, and that they frequently localize in tissues and take part actively in pathological processes originated by quite different groups or organisms. The careful bacteriologist realizes that the diagnostic demonstration of bipolar organisms is considered limited for these reasons. On the other hand, we know that in advanced pathological lesions caused by bipolar organisms, particularly when necrosis is present, the bacteria are very rare or entirely absent, a condition which is well illustrated by the liver lesions in some of the cases which I have seen. The very small percentage of cases (cases I and VI) in which bipolar organisms were isolated, is difficult to explain. Low virulence or localization of the organisms in organs which have not been tested, has to be considered; the question can only be settled by further experiments.

I feel that the bacteriological evidence thus far collected is by no means sufficient to make a conclusive diagnosis of hemorrhagic septicemia.

5. *Epidemiology of the cattle disease.* The disease makes its appearance usually at the beginning of July. Sporadic cases occur until the beginning of January. Even after the animals have been removed from the pasture, fatal cases are noted in the stable. During some weeks the extent of the disease is enzootic. Two or three dead animals are found on the ranch on the same day. So far, outbreaks on high, swampy mountain pastures only, have attracted our attention. Age and sex apparently have no influence on the epidemiology. In the same localities anthrax and blackleg exist endemically, but the entire live stock is prophylactically immunized against these two diseases and there is no doubt in my mind but that the evidence thus far collected eliminates these two diseases.

The telluric and climatic conditions in the Sierra Valley are similar to those commonly found in localities where hemorrhagic septicemia is endemic. A careful survey by Dr. Iverson failed to demonstrate any plants which could be responsible for the death of the animals. The question of insects and their seasonal prevalence as having anything to do with the cattle disease, has not as yet been thoroughly investigated but will be undertaken at the first possible opportunity.

Epicrisis. In the foregoing paragraphs I have attempted to describe the facts which have been personally collected during the study of a destructive cattle disease in California. The experimental records will be published elsewhere, but I feel that an analysis of the inclusive findings is warranted because the animal losses are heavy. Some means should be adopted whereby the stockmen can keep animals on the notoriously dangerous territories, as well as to relieve their already heavy burdens.

Throughout the recital of facts, I have assumed an attitude which will give the reader the impression that I am of the opinion that the disease is an acute form of hemorrhagic septicemia. The anatomical lesions are certainly of such a nature that everyone familiar with the interpretation of lesions would feel that the diagnosis ''hemorrhagic septicemia'' is logical. Furthermore, the bacteriological results would be confirmatory, in two cases at least, for the unscrupulous laboratory worker. One has to remember, however, that in many different diseases bipolar organisms or Pasteurella have been isolated, which in the recent and more critical years of bacteriological knowledge have been recognized as being due to protozoa or filterable virus. I do not imply herewith that I think the cattle disease is due to protozoa, because a search along these lines has been made and has been negative. In considering these conditions a certain degree of reserve is doubtless appropriate.

The striking liver lesions are the result of a blood infection; the blood vessel lesions with thrombosis can be followed along the branches of the hepatic arteries, portal and hepatic veins. The lung and kidney lesions have a similar origin; the entire inflammatory reaction on the duodenum follows the primary focus in the liver. The epidemiology and the telluric conditions all strongly point in the direction of hemorrhagic septicemia.

As a working hypothesis, without extending myself further critically, I have assumed that the disease this year is, in all probability, hemorrhagic septicemia. A broad, harmless experiment in immunizing about one-half of the live stock at Sierraville with a special *B. bovisepticus* vaccine using the other half as a control, will perhaps satisfactorily settle the question and establish the long denied diagnosis.

HOG CHOLERA.

This disease continues to be the perplexing problem that it has been in the past. Instead of preventive vaccination controlling its ravages, we believe that in many instances the use of the simultaneous method of vaccination, including, as it does, the use of a potent virus, has been one very prolific means in the continued spread of hog cholera. This is all brought about by ignorance and carelessness in vaccinating hogs, and all this ignorance and carelessness can not by any means be attributed to the hog raiser alone. On the contrary, while many hog raisers have, in some instances, been responsible for this disease spreading from their premises, we believe hog serum agents and vaccinators in their desire to obtain business are likewise responsible, in many instances, for the continued spread of this disease. While it is true that the last legislature provided a law that regulates the manufacture of serum and virus in this state, there is no law regulating their use. It is very questionable whether, at this late day, it would be advisable to enact such legislation, for there is now hardly a hog-raising community in this state where the disease has not existed, and our principal means of fighting the disease is by education and preventive vaccination intelligently conducted.

TUBERCULOSIS.

Tuberculin testing of dairy and breeding herds on request of owners has been conducted during the past two years. Such work has only been done when the owners of herds evince a desire to determine the extent of tuberculosis infection in same with the idea in view of cleaning up and maintaining tuberculous free herds. While our meagre facilities prevented us from doing as much of this important work as we would like, there were, however, 5,408 head of cattle tested, 741 or 14.7 per cent of which exhibited positive reactions to the tests. Out of the total number of 5,408 cattle tested, 4,082 cattle were tested by regular veterinary inspectors of this department. The balance, 1,326 head, were tested by municipal and other official veterinarians reporting to this department.

While the intradermal method was most generally employed, this test was, however, supported in some instances by the subcutaneous method.

In a number of instances the percentages of affected animals were so high that attempts to eradicate the disease by segregation of reacting animals would, in our opinion, have been inadvisable, and in such instances we have decided the rearing of calves on milk that was heated sufficiently high and long enough to destroy any tubercle bacilli that it might contain, as well as the segregation of such calves from their dams as soon after birth as possible. In other words, the Bang system, or some modification of same, was, after a thorough study of the herd, premises, equipment, etc., recommended as the best and most economical method of cleaning up. Where we were permitted to follow up such work, semiannual tuberculin testing of the calves was advised in order to detect any congenital or other chance cases of tuberculosis that might occur among them. Where the percentage of reactors was low, or in instances where segregation of calves and feeding of properly heated milk was objected to, segregation of reactors and repeated testing of the herd was advised, paying particular attention to cleaning and disinfection of premises.

No matter what method is adopted to rid a herd of tuberculosis, the utmost attention to detail is absolutely necessary in order to insure any degree of success. Unfortunately, in some instances the owner of a herd will make an excellent start and for awhile follow directions implicitly, but as it is a piece of work that must necessarily cover a number of years, sooner or later, his employees become careless in detail, or the plan of the work is changed without consultation, and, as a consequence, the effort proves abortive. Altogether, however, we feel very much encouraged in the results so far obtained. The large demand for clean breeding stock is an indication that the dairy interests are giving the subject of tuberculosis control and eradication considerable attention.

ANTHRAX.

This disease still continues to be the cause of considerable losses, especially among cattle. Its existence was investigated on 84 premises in the following counties: San Joaquin, Marin, Santa Clara, Alameda, Humboldt, Solano, Madera, Sonoma, Monterey, Napa, Stanislaus, Yolo, Colusa, Santa Cruz, Mono, Butte, Merced, Fresno, Yuba, Sacramento, Tulare, San Benito, Orange, Kern, Inyo and Ventura.

This fatal disease of animals, including man, is very difficult to eradicate inasmuch as once the infection contaminates the soil, especially the moist, rich lands, as found along our river courses, it remains there practically indefinitely and claims its victims year after year. Our efforts in the past have been to check further spread of the infection to neighboring premises, as well as endeavoring to control the disease on the infected premises. In former years the latter has been difficult owing to the fact that in many instances the removal of animals from infected premises was impractical, and vaccination against this disease by the methods then in vogue was very unsatisfactory. Anthrax has now been robbed of its terrors by a new method of producing immunity, viz, the serum-spore method of vaccination. Without attempting to go into detail I might state that the results observed by this department in the use of the serum-spore method of vaccination in more or less abruptly aborting active outbreaks of this disease, authorizes us to advocate, and at times insist on such vaccination as a means of checking an outbreak.

Many laboratory diagnoses for this disease have been made for the State Veterinarian, and others, in the laboratory of the State Board of Health, and I wish to take this opportunity of acknowledging this and other important and valuable services rendered by that department.

TEXAS FEVER (CATTLE TICK ERADICATION).

The first real setback in our work of eradicating the cattle tick, the disseminator of the disease known as Texas cattle fever, occurred in 1915. In July of that year this disease was found on the New Columbia ranch of Miller & Lux, located near Firebaugh. An investigation by the writer revealed that for several years past cattle died on some of the fields of the ranch bordering on the San Joaquin River, but Texas fever was not suspected. In July of 1915, however, cattle began to die in considerable numbers, and the management becoming alarmed, requested assistance. At this time there were some 20,000 head of cattle on the New Columbia, and an inspection revealed that most of them were tick infested. In cooperation with the United States Bureau of Animal Industry immediate measures were adopted to control and eradicate this infestation, and I am glad to state that at the present time it appears to be eradicated. We will take no chances, however, and cattle inspections will be continued on these premises until we can feel safe in declaring the ranch clean.

This outbreak of tick fever on the New Columbia was undoubtedly due to a hold-over infestation. This ranch was grossly infested with ticks a number of years ago but we thought with the work that had been done on it that it was clean. Renegade cattle in the jungles along the San Joaquin River undoubtedly perpetuated the infestation, and the ticks increased from year to year until 1915, when large numbers of susceptible cattle became infested, causing the severe losses which attracted our attention.

One adjoining ranch, rented by the Yosemite Stage and Transportation Company, was also found infested. From present outlook this ranch is now also clean. Inspections of cattle on all adjoining ranches, as well as other inspections throughout the San Joaquin Valley, did not reveal any more ticks.

During the present year the last quarantine for Texas fever has been removed from this state by the federal government. This is a great accomplishment when it is realized that only a few years ago the quarantined area included all that part of California situated south of Monterey and Stanislaus counties. No one thing has contributed more to the progress of the cattle industry in this section of California than the eradication of the cattle tick.

In order to take no chances California is still maintaining provisional tick quarantines in the northwestern part of San Luis Obispo, southwestern part of Orange, and northwestern and most southerly parts of San Diego counties, where a few ticks have been found in the last two years. Furthermore, San Diego County will always be menaced by the tick infested cattle of Mexico, where no tick control work is attempted, and, consequently, close inspections of cattle along the border will constantly have to be made.

MISCELLANEOUS WORK.

Much time and work has been consumed in investigating sickness and deaths of animals which were attributed to minor infections, feeding troubles, including forage poisoning, lack of attention, etc. Likewise time was occupied in investigating and correcting, when necessary, reports of unsanitary premises, improper disposition of carcasses, and pollution of streams with carcasses.

In accordance with instructions from the State Board of Control, animals purchased at various times by state institutions were examined by inspectors of this department to determine their desirability, value and soundness, and in addition, the animals at these institutions have been examined from time to time for the purpose of condemning and weeding out worthless individuals.

Some time has been also consumed in deliberating and discussing various live stock problems with different live stock organizations and other bodies.

SHEEP SCABIES.

While this disease has been under complete control in this state for several years past, occasional outbreaks occur, however, making it necessary for continual inspections to be made. In this work the state still has the cooperation of the Bureau of Animal Industry, United States Department of Agriculture.

GLANDERS.

Our records show that during the last biennial period 512 head of horses and mules were destroyed for glanders. This is 76 less than the last biennial report shows. To be perfectly correct I should say that there were 220 less animals slaughtered for glanders in the last biennial period as compared with the previous biennial period. In making up the totals for the period ending June 30, 1914, 154 head of destroyed animals were inadvertently omitted. The total for that period should, therefore, have been 752 instead of 598 as previously reported.

The same vigorous policy in our campaign against glanders, adopted several years ago, was persistently pursued during the last two years, and, as a result, a gradual diminution is shown in the number of animals affected and destroyed from year to year. In the two years ending June 30, 1912, 1,252 head of horses and mules were condemned and destroyed for glanders; in the next two years 752 head were condemned and destroyed, while in the two years just passed 512 head were destroyed.

The ophthalmo-mallein test continues to be the official diagnostic test of this department, supported at times, however, by the other recognized tests.

Glanders Table.

Counties	Tested	Tested and passed	Tested and destroyed	Held for retest	Destroyed without test	Total destroyed	Reactors not disposed of
Placer					1	1	
Marin	24	21	3		8	11	
Santa Clara	49	44	5		7	12	
Alameda	185	153	12	1	23	35	19
Solano	9	8	1		2	3	
Yolo	1	1					
San Francisco	871	782	84	5	98	182	
Fresno	27	10	17		9	26	
Madera					2	2	
San Diego	17	13	4		5	9	
Imperial	105	92	13		3	16	
San Joaquin	34	23	10		11	21	1
Tulare	102	95	7		9	16	
Kern	82	66	16		7	23	
Sacramento	49	44	5		4	9	
Modoc	7	6	1		1	2	
Kings	31	28	3		3	6	
San Mateo	29	9	20			20	
Stanislaus	32	26	6		3	9	
Santa Cruz					1	1	
Orange					1	1	
Colusa	22	20	2		3	5	
Sutter	21	19	2		4	6	
Tehama	3		3		1	4	
Butte	42	35	5	2		5	
Glenn	35	35					
Ventura	131	127	4		7	11	
Merced	29	21	8		2	10	
San Bernardino	17	10	7		5	12	
Santa Barbara	45	42	3			3	
San Luis Obispo	20	20					
Monterey	4	1	3		2	5	
Napa	1	1					
Yuba	40	40			2	2	
Riverside					4	4	
Los Angeles	133	105	22		18	40	6
Totals	2,197	1,897	266	8	216	512	26

THE NEW DAIRY LAW.

The law providing for the tuberculin testing of all cows from which raw milk is sold at retail, etc., became effective October 1, 1916. At the date of the writing of this report, December 31, 1916, the law will have been in effect three months. This report has been purposely delayed in order that the data which was collected during these three months could be included so that a more or less intelligent idea could be obtained of the amount of work that will be involved in making such tuberculin tests in the future so that the necessary funds can be provided to carry it on. The existing law (Chapter 742, Statutes of 1915, sections 12, 13 and 14), provides that it shall be the duty of the State Veterinarian to enforce the tuberculin testing provisions of the law, and an appropriation of $10,000.00 is appropriated for this purpose. This amount, as the data herewith presented shows, is entirely inadequate to properly carry on this work.

On October 1st three veterinarians, who had qualified through civil service examinations, were appointed. The volume of correspondence and other routine work caused by this law becoming effective made it necessary to also employ two extra stenographers.

The intradermal tuberculin test has been adopted as the official test of this department. This test is, however, supported, whenever deemed necessary, by the subcutaneous method. The intradermal test was adopted for various reasons. In our opinion, which is supported by those who have compared the various tests, it is a more searching test than any of the others, is more easily applied, can be safely interpreted in all atmospheric temperatures, is easy on the cows, and can be applied to cattle of all ages and classes. In addition, many more intradermal tests can be conducted in the same space of time than subcutaneous tests. Instructions to inspectors are to test every animal in the herd, including fresh and dry cows, bulls and calves. This would be almost impossible of accomplishment if the subcutaneous method alone were employed.

While this office did not participate in advocating the enactment of this act, we have, since it became a law, given it considerable study, aside from the reason that we wished to obtain a clear idea of our duties in relation thereto, and we are of the opinion that if the tuberculin testing provisions are properly and continuously enforced, and if the dairy interests are properly advised and assisted, this law will be the means of making great headway in the control and eradication of bovine tuberculosis in California, with a minimum expense to the state and dairy interests. We have, therefore, borne these facts in mind, and our inspectors are instructed not to do this work in a perfunctory manner, but to study the problems on every dairy farm visited and after the results of the testing is evident, explain to the owner the easiest and most economical manner by which tuberculosis in his herd might be stamped out, and I have the pleasure to report that our efforts in this direction are meeting with sympathetic interest and approval from the dairymen.

I am also happy to report that the fears of the small dairymen who were so generally exercised over the enactment of this law, especially the tuberculin testing provisions thereof, thinking that it meant the confiscation of their means of livelihood, have not been borne out, judging from the testing already done. Our work has shown, and it verifies the views we have always held in the premises, that tuberculosis is much more prevalent among the large dairies than among the smaller ones.

An examination of the chart, which follows, shows that 503 separate dairies, each containing ten or less animals, were tested, out of which 430 dairy herds proved entirely free from tuberculosis as revealed by the tests and physicial examinations. In 198 dairies, containing ten or more animals, 51 herds were entirely free.

Report on Dairies Containing Ten Animals or Less.

Aggregate number of dairies	503
Aggregate number of animals tested on these dairies	1,277
Aggregate number of reactors on these dairies	95
Aggregate number of dairies showing no reactors whatever	430

Report on Dairies Containing More Than Ten Animals.

Aggregate number of dairies	198
Aggregate number of animals tested on these dairies	8,470
Aggregate number of reactors on these dairies	1,335
Aggregate number of dairies showing no reactors whatever	51

Applications are now on file in this office for the tuberculin testing of over 6,000 herds, containing between 75,000 and 100,000 head of dairy animals. As a large number of these herds must, in accordance with the provisions of the law, be tested twice annually, and in order to assist dairymen in eradicating tuberculosis, it will be advisable to test some herds oftener, it can readily be seen that the appropriation of $10,000.00 to serve the period between October 1, 1916, and June 30, 1917, or $1,111.11 monthly, is entirely inadequate, and I would, therefore, respectfully recommend that this appropriation be increased to $70,000.00 for the next biennial period.

Following is a summary of the tuberculin testing conducted between October 1, 1916, and December 31, 1916:

	October	November	December	Total
Number of herds tested	112	224	368	704
Number of herds free	76	147	244	467
Number of cattle tested	2,810	2,680	3,970	9,640
Number of reactors	354	397	629	1,380
Number of suspicious	39	23	39	101

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FIRST BIENNIAL REPORT

OF THE

California State Department of Weights and Measures

1915-1916

SACRAMENTO, CALIFORNIA
DECEMBER 18, 1916

CALIFORNIA STATE PRINTING OFFICE
SACRAMENTO
1917

Second Annual Conference of State Weights and Measures Officials at Sacramento, September, 1916.

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LETTER OF TRANSMITTAL.

To His Excellency, Hiram W. Johnson,

Governor of the State of California.

Sir: In accordance with section 13 of Chapter 597 of the Statutes of California, approved June 16, 1913, I have the honor to herewith transmit to you, and through you, to the Honorable State Legislature, the First Biennial Report of the State Department of Weights and Measures, beginning with date of inception, July 10, 1914, and ending October 31, 1916.

Respectfully submitted.

CHARLES G. JOHNSON,
State Superintendent of Weights and Measures.

Sacramento, Cal., November 1, 1916.

FOREWORD.

In submitting this, my First Biennial Report of the State and County Departments of Weights and Measures, I desire to make grateful acknowledgment of the liberal support of the people in general and the substantial cooperation of the merchants, and the efficient work of the weights and measures officials towards effectively establishing throughout the state the common employment of uniform systems of weights and measures in accordance with legal standards.

I also desire to express my thanks for the valuable assistance extended by Dr. S. W. Stratton and his assistants, of the National Bureau of Standards.

I pray for a continuance of these substantial relations in the interest of commercial honesty and legitimate competition.

CHARLES G. JOHNSON, Superintendent.

INTRODUCTORY.

Before dealing directly with the work attending the inception of the State Department of Weights and Measures, its organization and its broad scope of activity, resulting from the enforcement of the Weights and Measures Law, the Net Container Act, and the Public Weighmaster Act, I beg to refer briefly to the history of weights and measures legislation in the state of California prior to the enactment of the statutes creating this State Department of Weights and Measures.

For more than sixty years prior to the adoption of the constitutional amendment of 1911, which resulted in the passage of the present Weights and Measures Law, the people of the state of California labored in vain for the passage of a workable and enforceable law to establish a system of uniform weights and measures, and to provide for the apprehension and effective prosecution of the short weight and measure evil.

On March 30, 1850, the first session of the legislature passed an act to establish a standard weight and measure, making the Secretary of State ex officio sealer and the county clerks of the several counties ex officio ,county sealers of weights and measures. This act provided that the Secretary of State should procure from the United States government copies of the standard weights and measures provided for by congress of the United States under the act approved June 14, 1836. It further provided that the Secretary of State should deposit copies of these standards with all county clerks acting as ex officio sealers, at the expense of the counties. This, however, was not done until 1875, and then only twelve counties procured the copies. It also provided for a fee for all inspection and sealing of weighing and measuring devices. This act proved its utter uselessness by providing that the county sealers must compare all weights and measures which were brought to them for that purpose and not otherwise. This provision rendered the act ineffective for a score of years following.

On April 30, 1853, this act was amended providing that all persons using weights or measures must have same certified to and providing excessive penalties. It was again amended on May 11, 1861, discriminating against San Francisco and other counties, and, as a consequence, the entire act was subsequently repealed on April 27, 1863.

Little more in the way of weights and measures legislation seems to have occurred until 1872, when the act providing for a political code for the state of California was adopted. On March 12, 1872, an act purported to be founded on the act of 1861 was adopted and remained on the statute books with little alteration until 1891. This act continued to make the Secretary of State ex officio sealer of weights and measures, and county clerks were made ex officio county sealers. Just how it worked out is best shown in the reports of the several secretaries of state to the Governor. Most of these reports presented utter disregard and indifference towards its enforcement, and no effort or concern was put forth to make the law operative.

Secretary of State Thomas Beck, in 1875, in his report recommended to the Governor the repeal of the entire act, contending that it was inoperative and discriminatory. In his report on June 30, 1879, in referring to the Weights and Measures Act said, "As the law now stands it is entirely inoperative, and little or no attention is paid to its provisions by the county clerks. Consequently, I have nothing to report under this head."

Daniel M. Burns, Secretary of State, under date of July 1, 1880, in his report to the Governor, referred to the act as follows: "I have neither sealed, weighed, nor measured. The office of sealer of weights and measures is entirely void of duties. A repeal of this law would eliminate from our statutes a cumbersome and useless law."

E. G. Waite, Secretary of State, in his report to the Governor in 1890, referring to the law, said: "The law is not one of a nature that I could or would attempt to enforce."

During this period, and in face of all efforts to provide for a comprehensive and workable law, the clause providing that the county sealers must compare all weights and measures which were brought to them for that purpose and no other, still remains, and the records show that only on one occasion were weights sent to the Secretary of State for comparison and they came from San Francisco. They were returned unsealed with the advice that he had no balance on which to compare them.

In a later report Secretary of State Waite refused to enforce the law, and defined his attitude in his report to the Governor by contending that the law was unconstitutional and ineffective, and recommended its repeal. Waite's recommendations were crystalized in the legislature of 1907, which on March 21 adopted an act repealing all weights and measures laws then on the statute books.

Charles F. Curry, Secretary of State, in his report on June 30, 1910, called the attention of the Governor to the need of an adequate law on weights and measures. Quoting from his report, he said: "I believe if a proper law was enacted by this state, it would be to the interests of the purchasing public and the shippers of merchandise and products."

On March 7, 1911, Senate Constitutional Amendment No. 2, proposing an amendment to section 14, Article Eleven, of the constitution of California, was adopted by the legislature, empowering that body to provide general and uniform laws for the establishment of uniform weights and measures in the state of California, and the effective enforcement of same. This amendment was introduced by Senator Richard J. Welch, and its successful passage was due to his untiring efforts in its behalf. This amendment was submitted to the people at the general election on constitutional amendments held on October 10, 1911, and carried by the largest vote of any amendment submitted, and thereafter at the extra session of 1911, Senate Bill No. 2 was introduced for the purpose of making necessary provisions for weights and measures regulations. This bill unfortunately failed of passage.

Frank C. Jordan, Secretary of State, and ex officio sealer, in his report to the Governor in 1911, contended that the provisions of Chapter 211 imposed on him duties in relation to weights and measures which he was unable to discharge, due to the failure of the legislature in not providing funds for the purchase of missing and additional standards. He commended the law as being good and vitally necessary for the protection of the public, and urged the prompt and effective enactment of a comprehensive law.

The early part of 1911 Dr. S. W. Stratton, Director of the Bureau of Standards, at Washington, caused an extensive investigation relative to weights and measures throughout the state of California resulting in the preparation and issuance of a report disclosing primitive trade customs and conditions in general, and the employment of weighing and measuring devices, which greatly facilitated the perpetration of fraud, and making mention of commercial misconduct and abuses that were a revelation. The moral effect of the report of the investigation conducted by the Bureau of Standards, together with the untiring efforts of Senator Richard J. Welch in 1911, effectively paved the way for legislation that would not alone provide for a uniform system of weights and measures, but a law that would regulate their employment and provide penalties for commercial misconduct perpetrated by using fraudulent weights and measures and the practice of trade customs discriminating against an honest standard.

With this purpose in mind, Senator Welch obtained the legal services of Mr. George Lull, Assistant City Attorney of San Francisco. These two gentlemen, together with myself, prepared and drafted a bill on weights and measures, and submitted it for approval to Dr. S. W. Stratton, Director of the Bureau of Standards, at Washington, who returned it after making a number of changes, with the comment that in its present form it may well be considered the model weights and measures law of the United States.

During the legislative session of 1913, this bill was introduced by Senator Edward J. Tyrrell who took an extraordinary interest in weights and measures, and fostered the bill to a successful passage. At the same time Assemblyman W. F. Chandler introduced an assembly bill relative to weights and measures in opposition to the Tyrrell bill. Both of these bills passed the Senate and Assembly, and both came up before Governor Hiram W. Johnson for his signature, who, after careful consideration and deliberation, approved the Tyrrell bill (Chapter 597) on June 16, 1913.

This act relieved the Secretary of State as ex officio sealer of weights and measures, and placed at its head a superintendent of weights and measures to be appointed by the Governor for a term of four years. It also provided funds for the purchase of necessary standards of weights and measures, as well as copies of same. The law is carefully drawn and provides in plain and comprehensive form provisions to facilitate the work which has been demanded by the people of the state of California for a half century, but never before carried out.

From personal contact, and by word of those who were your close associates, I learn of your hearty accord and approval of the objects and purposes of this law, and to you and to your administration the people of the state of California are indebted for the writing into the statute books of the state of a most comprehensive and workable law, providing for the establishment of the uniform system of weights and measures, and providing for its effective enforcement, especially so when it is recollected that for over sixty years previous administrations wrestled with this problem and failed.

ORGANIZATION.

On the 10th of July, 1913, by virtue of your appointment, I assumed the duties of Superintendent of Weights and Measures for the state of California, and began at once to formulate the organization of this department in accordance with the provisions of Chapter 597 of the Statutes of 1913.

My experience as Sealer of Weights and Measures for San Francisco County, and my knowledge of the plans and systems under which other state departments were working, enabled me to proceed intelligently with the organization without unnecessary delay.

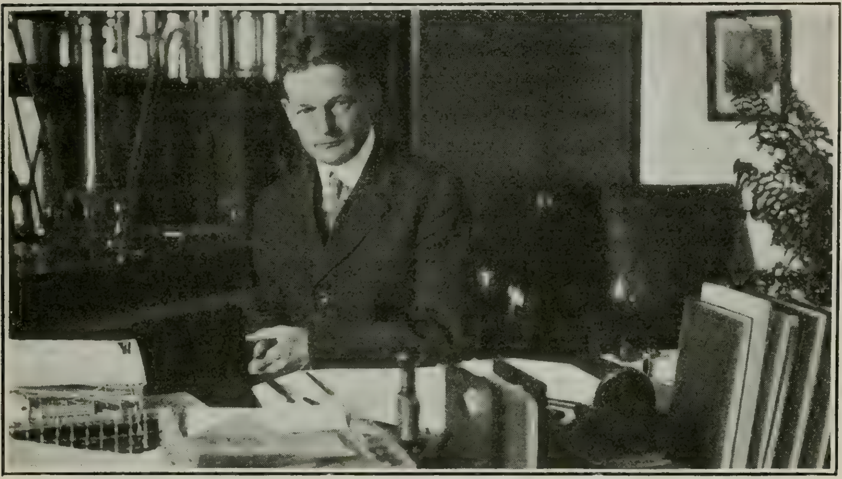
Owing to the crowded condition of the Capitol Building, suitable housing was obtained in the Nicolaus Building, in Sacramento, and the necessary office equipment such as desks, files, stationery, etc., was procured.

APPOINTMENTS.

Acting under authority as provided for in section 3, on the 11th day of July, 1913, I appointed William C. Hendricks as Chief Deputy.

On July 24, 1913, I accepted from the State Civil Service Commission the certification of Miss Lizetta E. Krause as stenographer.

On July 1, 1915, I accepted from the State Civil Service Commission the certification of Rhoda L. Chapman, as stenographer, additional service being required as the result of the enforcement of the Public Weighmaster Act.



Chas. G. Johnson, State Superintendent.

STATE STANDARDS.

As directed by section 6, I obtained from the Secretary of State all standards of weights and measures in his possession. These standards were found in a deplorable condition. Many were incomplete, and due to time and want of proper care, they had become corroded, and as a consequence, inaccurate. These standards I caused to be cleaned, and and effort made to have them adjusted to accuracy. This, however, due to their peculiar manufacture, was impossible. They are now retained by this department but considered useless.

Specifications were prepared for a complete set of standards of all weights and measures, together with balances and other equipment for the proper prosecution of the work of the department. These specifications were submitted to the State Board of Control and their purchase authorized. The cost of these standards, together with the entire equipment, was approximately $800.

SPECIFICATIONS AND TOLERANCES.

The first and most important duty was the preparation and adoption of a set of specifications and tolerances. These were necessary in order that the weights and measures act and the rules and regulations promulgated thereunder might be put into force and effect without unnecessary hardship and without wholesale condemnation of apparatus which, while not of the best construction, was nevertheless fairly satisfactory, and could be used for some time without greatly prejudicing the rights of the purchasing public. These specifications, taken as a whole, were designed to improve the general types of apparatus, and render possible the most efficient enforcement of the law.

As the result of the adoption of a fixed tolerance (legal error) and specifications governing the manufacture of weighing and measuring devices, the old and worn-out types would gradually be replaced by apparatus of a more satisfactory type with a greater tendency towards permanent accuracy, and at some future date when the gradual process of elimination has been going on for some time, only apparatus of satisfactory construction will be in use.

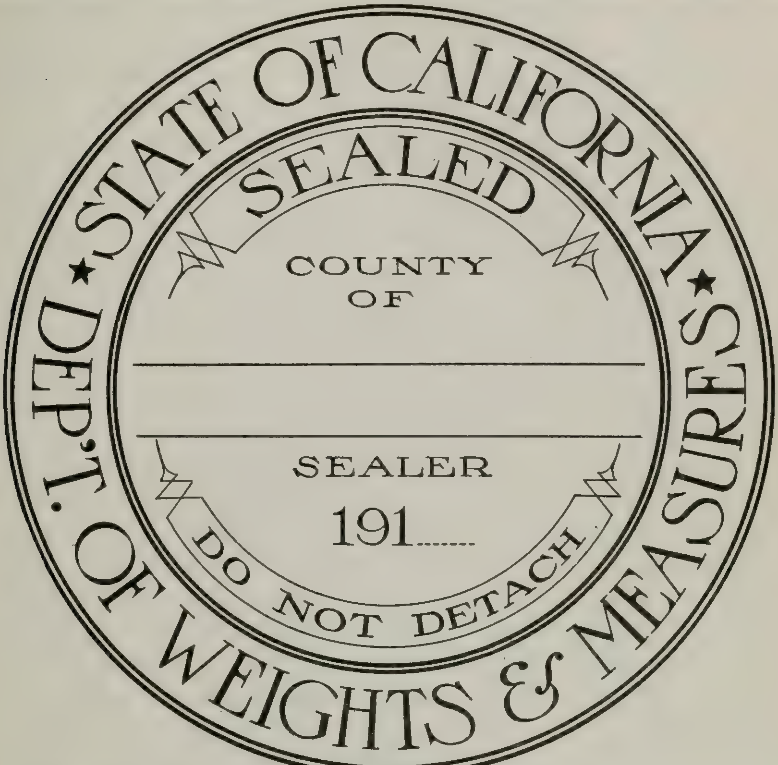
The specifications and tolerances which have been compiled apply to both old and new apparatus, and the specifications which have been limited to apply to old apparatus has been gradually withdrawn, and two years of practical enforcement effectively demonstrates a benefit and protection, not alone to the consumer, but for the benefit of the honest merchant and manufacturer as well, in assisting them to carry on their business free from the unjust competition effected through the employment of old and worn-out, inaccurate, and I may say, fraudulent weighing and measuring devices.

The specifications and tolerances adopted by this department and effective in the state of California are similar to the tolerances established by the National Bureau of Standards.

SEALS, FORMS, TAGS, ETC.

In order to accomplish uniformity of enactment and to so arrange that there would be no conflict of authority, and in order that the general scheme of enactment appertaining to sealing and condemning apparatus might be uniform, seals, condemnation tags and certificates of inspection, identical in every respect, were prepared and furnished to the county sealers. These seals and tags of uniform design are now in common use throughout the state. The only variance in appearance is the color, which is changed each year.

A certificate of inspection covering the inspection of gasoline measuring pumps and other measuring devices was prepared and the same is issued to all persons employing apparatus of this character, providing it is accurate. These certificates are placed conspicuously in order that the public may be advised that the apparatus employed has been inspected.



Form of Seal Adopted Throughout the State, "The Guarantee of Accuracy."

ORGANIZATION OF COUNTY DEPARTMENTS.

The most important task confronting the department was the efficient organization of the various county departments of Weights and Measures. Section 16 of the Weights and Measures Act make it the mandatory duty of the Board of Supervisors of each of the counties of the state to appoint a sealer of weights and measures within one hundred twenty days after the approval of the act by the Governor. The act further provides for his compensation in the amount of five dollars for each day actually employed in the service of the county. Such compensation to be audited and paid as other claims against the county.

With consistent expediency the majority of the counties appointed a county sealer of weights and measures. There were, however, a number who failed to do so. A communication was addressed to the counties failing to appoint, advising them that in accordance with the provisions of section 16, "if a legislative body of any county, or city and county, did not appoint a sealer for such county, or city and county, within thirty days after the receipt of this request for such appointment, the State Superintendent would assign, as soon as practical, a Deputy Superintendent to perform all the duties of sealer in such county, or city and county, as provided in the act to be performed by county or city sealers, and to furnish copies of the original standards of weights and measures for use by said deputy in such county."

Prior to the expiration of the thirty days provided, additional counties availed themselves of the appointing power. There were, however, five counties, namely, Nevada, Modoc, Trinity, Ventura and Alpine, which did not appoint a sealer. Acting in accordance with the provisions of the act, I assigned Mr. J. C. Kesler to perform the duties of sealer in Nevada, Modoc and Trinity counties, and Mr. H. H. Huntsberger to perform the duties of sealer in Ventura and Alpine counties.

In my communications to the county legislative bodies, I emphasized the fact that the duties incumbent on a sealer were of a character that called for a serious application to scientific problems, a knowledge of mechanics and unusual physical fitness, executive ability, attended with tact and above all good common sense. These qualifications are essential in the person of the sealer in order that the service be the useful and valuable service in the interests of the people that the law provides. In most instances men of excellent type and character were selected. They were, however, unfamiliar with nearly every phase of their work, as well as the law, and upon the Superintendent devolved the duty of schooling and preparing them in the practical, scientific, mechanical, legal and technical duties. The importance of their work was seriously impressed on them, inspiring them to obtain the highest possible standard of efficiency. In most instances the sealer was directed to come to Sacramento, where he was given my personal attention. A convenient room was obtained where every weighing and measuring device in use throughout the state was provided for practical demonstration. The various provisions of the law were carefully construed. After a period of practical training and careful study they were subjected to a departmental examination consisting of twenty questions on each of the following subjects, namely, "Scales," "Measures" and "Law." Their standard of efficiency can in a measure be judged by the fact that the lowest marking was 78 per cent out of a possible 100 per cent. Lectures on various subjects were prepared for their benefit and the policy inaugurated by the department relative to the enforcement of the laws was carefully explained to them, which policy provided for the enactment of the laws along educational lines, calling for the highest exercise of good common sense, tactfulness and dignity.

The following counties have appointed sealers who are at the present time superintending the enforcement of the laws in their respective jurisdictions:

Sealers.

County	Name	Address
San Benito	Benjamin B. Shaw	Hollister.
Orange	George McPhee	Santa Ana.
Sacramento	Chris Jacobsen	Sacramento.
San Francisco	Lawrence J. Dolan	San Francisco.
San Diego	W. E. Crane	San Diego.
Shasta	S. S. Stickley	Buckeye.
Humboldt	Mrs. R. D. Johnston	Eureka.
Sonoma	J. L. Gist	Santa Rosa.
Calaveras	F. W. Fisk	Murphys.
Santa Cruz	Humphrey Pilkington	Santa Cruz.
Stanislaus	C. E. Tucker	Modesto.
Colusa	P. H. Northey	Williams.
Monterey	Benjamin B. Shaw	Hollister.
Contra Costa	Ralph Harrison	Danville.
Yolo	Geo. A. Farish	Woodland.
Merced	Roy P. Thorpe	Merced.
Amador	C. M. Kelley	Jackson.
Siskiyou	J. H. Storey	Yreka.
Mendocino	H. H. Brown	Mendocino.
Kings	J. C. Griswold	Hanford.
Santa Clara	A. G. Walker	Palo Alto.
Tulare	A. M. Coburn	Lindsay.
Solano	J. S. Polland	Suisun.
Plumas	J. N. Stephan	Quincy.
San Joaquin	O. T. Melton	Stockton.
Fresno	H. P. Jayne	Fresno.
Los Angeles	Chas. M. Fuller	Los Angeles.
Kern	L. H. B. Farr	Bakersfield.
Yuba	Frank Lane	Marysville.
Butte	A. J. Storey	Chico.
Marin	M. C. Doody	San Rafael.
Tehama	Frank Erwin	Red Bluff.
San Bernardino	Stephen F. Kelley	San Bernardino.
Del Norte	Harry M. Malpas	Crescent City.
Napa	James A. Daly	Napa
El Dorado	John F. Limpinsel	Placerville.
Alameda	Jos. S. Furtado	Oakland.
San Luis Obispo	R. L. Dempsey	San Luis Obispo.
San Mateo	Mathew M. Grady	Colma.
Sierra	F. H. Turner	Downieville.
Santa Barbara	J. N. Watson	Santa Maria.
Madera	George Marchbank	Madera.
Riverside	George L. Wing	Banning.
Lake	John V. Davis	Kelseyville.
Imperial	F. W. Waite	El Centro.
Mariposa	John L. Dexter	Mariposa.
Placer	C. F. Richter	Auburn.
Mono	R. Grant Patterson	Bridgeport.
Tuolumne	H. S. Richardson	Sonora.
Sutter	J. H. Lamme	Sutter.
Inyo	W. J. Tinder	Bishop.
Glenn	T. F. Rawlins	Elk Creek.
Lassen	P. A. Chappius	Susanville.
Redlands (city)	M. E. Armstrong	Redlands.

Deputy Sealers.

County	Name	Address
San Francisco	M. J. Welch	San Francisco.
San Francisco	Thomas Slavin	San Francisco.
San Francisco	Chas. Wentworth	San Francisco.
San Francisco	Samuel Wacholder	San Francisco.
San Francisco	James Hughes	San Francisco.
San Diego	V. Bruschi	San Diego.
Fresno	Harry G. Nolan	Fresno.
Fresno	F. B. Johnson	Fresno.
Imperial	R. W. Stewart	El Centro.
Alameda	M. P. Scott	Oakland.
Alameda	J. J. Donovan	Oakland.
Alameda	Dave Boyle	Oakland.
Alameda	M. J. Campbell	Oakland.
Alameda	John Carey	Oakland.
Los Angeles	J. C. Milliken	Los Angeles.
Los Angeles	C. J. Buck	Los Angeles.
Los Angeles	F. W. Bundy	Los Angeles.
Los Angeles	J. D. Fisher	Los Angeles.
Los Angeles	R. D. Haskell	Los Angeles.

PRECISION AND OTHER TESTS.

Under the provisions of the act it becomes the duty of the Superintendent to compare, certify to, and seal, if accurate, all copies of standards used by the sealers, at least once in two years. Due to required exactness, this work was extremely slow and difficult. These tests consumed a great deal of time, the work falling entirely on myself and Chief Deputy.

Certificates of accuracy covering the comparison and sealing of the following weights and measures were issued:

2,900	Avoirdupois standard test weights.
975	Apothecary standard test weights.
975	Troy standard test weights.
380	Metric standard test weights.
450	Standard liquid capacity measures.
140	Cylindrical graduates.
70	Linear measures.
300	Miscellaneous standards for commercial use.

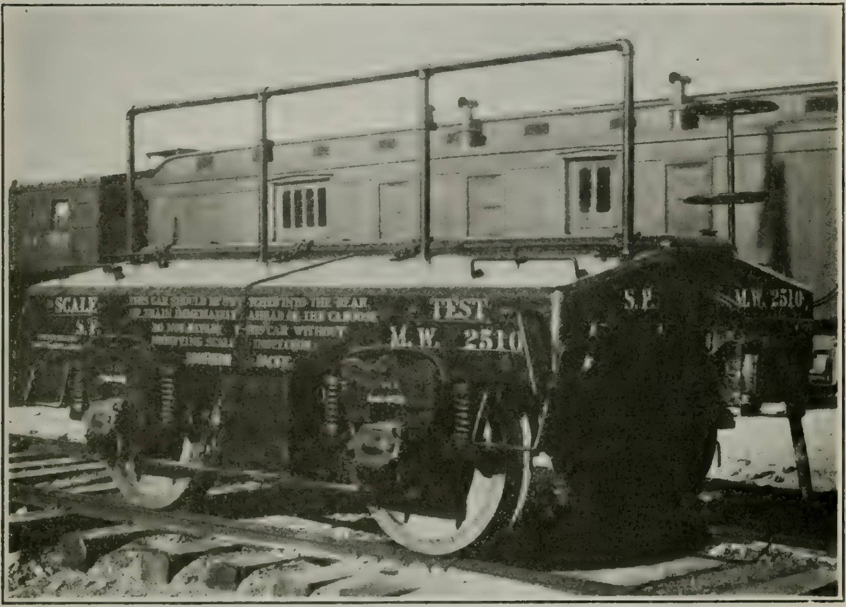
This makes a total of 6,190 pieces of equipment calibrated, a number of which required extensive adjustments.

RAILROAD TRACK SCALES.

The service of the department relative to the inspection and testing of the railroad track scales throughout the state is perhaps the most efficient of any state in the Union.

A satisfactory working condition has been effected with the carriers through their establishment of an inspection service maintained at their expense, under the supervision of this department.

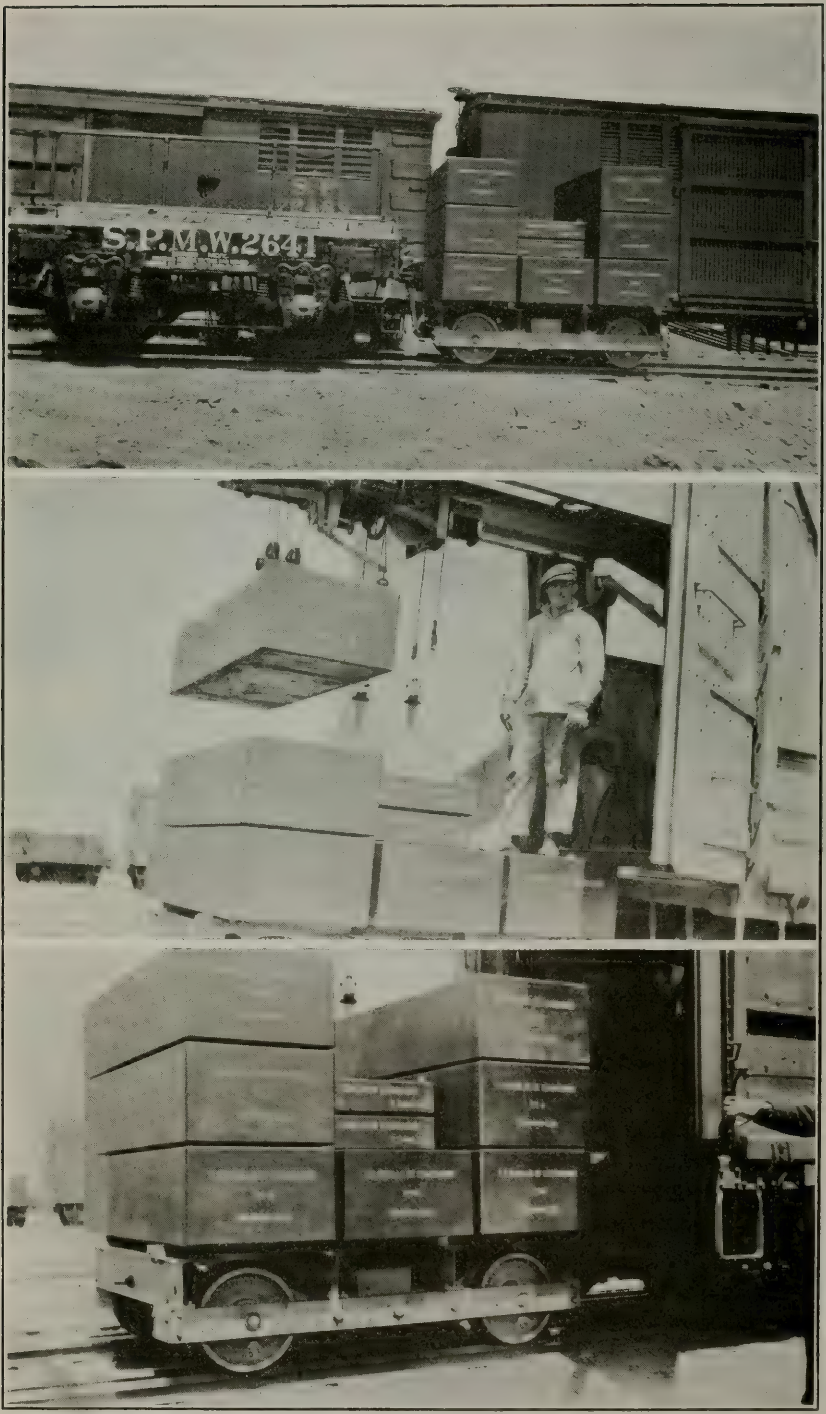
The test cars are prepared in accordance with specifications, and after they are tested on the master scale, they are sealed in the manner provided for under the act. The inspector in charge of the test cars notifies the county sealer, who accompanies the car and superintends the test. If the apparatus tested is accurate within the prescribed tolerance, the sealer seals it with the same concern that he would seal any other commercial weighing apparatus.



Railroad Test Car Employed by Southern Pacific Railroad.

During May of this year, this department was extended the courtesy of the railroad track scale equipment owned and operated by the National Bureau of Standards. This equipment consists of a specially built car, equipped with 80,000 pounds of bulk test weights. These weights are transferred and placed on a moveable test car by use of an electric crane. Four to six tests are made from different parts of the platform and the errors are carefully noted on the beam. The master scales employed in the state were tested with this apparatus and thirteen railroad track scales were inspected, out of which, seven, or 54 per cent, passed, and six, or 46 per cent, failed to pass the tolerance and were consequently condemned for repair.

During the past two years approximately 604 railroad track scale tests were made. This includes the tests made on apparatus owned by the carriers, as well as the apparatus under private ownership.



Testing an 80-ton Railroad Track Scale with Federal Government Equipment.

All platform scales and apparatus of smaller capacities are tested by the county sealers in the same manner as other apparatus employed in commercial use are tested.

I desire to make commendable mention of Mr. W. Gaskin and Mr. G. A. Easton, scale inspectors and expert mechanics, for their substantial cooperation and excellent work in the interests of accuracy and efficiency in heavy weighing apparatus employed by the carriers.

I desire, also, to acknowledge with thanks the courtesy extended by the Federal Bureau of Standards in sending their railroad track scale equipment to California, and to Mr. Boyer, who was in charge of same.

NET CONTAINER ACT.

Chapter 167, approved May 27, 1913, and commonly known as the "Net Container Act," was no doubt intended to effect similar regulations as provided for in the Net Weight Amendment to the Pure Food and Drug Act, as passed by congress on March 3, 1913. This intention, however, was only carried out in a very limited degree, and as a consequence, rendered many of its provisions impossible of enactment, due to its conflict in general with the Federal Net Weight Amendment.

During the legislative session of 1915, a number of amendments were introduced, passed and approved. These amendments caused the act to conform in general with the provisions of the Federal Net Weight Amendment, and the act in its present form is clear and comprehensive and has proven effective in accomplishing the purposes for which it is intended. The Net Container Act, in short, provides for the indicating of the net quantity of foodstuffs and stuffs intended to be used or prepared for use as food or medicine for human beings when sold or offered or exposed for sale in containers, thereby safeguarding the public against deception in quantity, when a commodity is sold or offered for sale in a container; 346,279 containers have been inspected during the past two years, with results as scheduled.

The weights and measures officials of the state have, in the most effective manner, obtained the fullest compliance with the requirements of this law, and the educational policy under which it has been enforced has generated the fullest cooperation from merchants and manufacturers relative to its application.

PUBLIC WEIGHMASTER ACT.

This law, like the Weights and Measures Act, has been introduced and enforced along educational lines, and the tact and concern with which it has been administered has influenced general cooperation, thereby making its influence effective in correcting and preventing commercial misconduct in the sale and exchange of bulk commodities.

The regulations which have been prepared and adopted, based on its provisions, have been enforced, not arbitrarily, but through the general acknowledgment of the usefulness and commercial good resulting from their general adoption.

Through the medium of this act the farmers and producers are enabled to obtain a relief long prayed for, in effectively establishing an authoritative force sustained by adequate penalty for its violation and making for the highest standard of accuracy and honesty by public weighers and persons who provide a record of weight, as in weight certificates, which record forms the basis for monetary settlement.

The act defines ''any person, firm or corporation engaged in the business of public weighing for hire, or any person, firm or corporation who shall weigh or measure any commodity, produce or article, and issue therefor a weight certificate which shall be accepted as the accurate weight on which the purchase or sale of such commodity, produce, or article is based, shall be known as a public weighmaster.'' It prescribes a bond of $1,000 for the faithful performance of his duties as such. It further provides for the adoption of a uniform weight certificate, which shall be known as the ''State Certificate of Weights and Measures.'' It also provides rules and regulations governing the performance of his duties and penalties for any violations of these provisions.

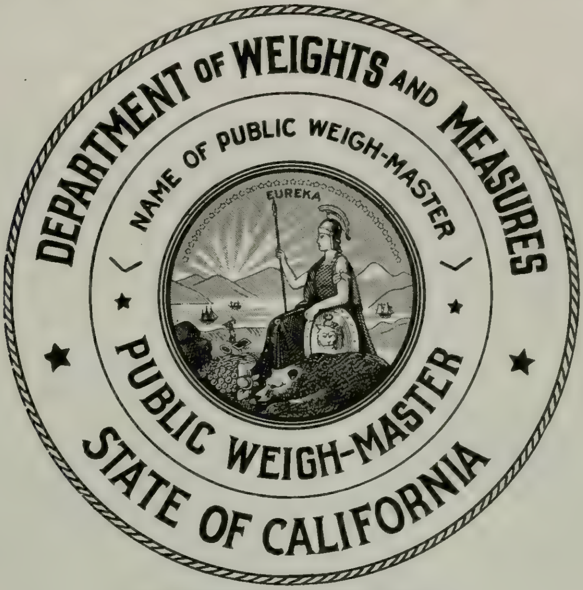
Over seven hundred public weighmaster bonds have been filed with this department, which have been approved, and a like number of certificates of appointment have been issued.

In the scheme of enforcement, this department is enabled to expeditiously investigate any complaint of variance in weight, irrespective of whether the commodity weighed is at point of origin or at its final destination.

During the past year a number of investigations have been made and in each instance the fullest cooperation has been extended by the public weighmaster. The form of certificate has been generally adopted and a weight certificate today is prepared and issued with similar concern as attends the issuance of a bank check.

The moral influence in the interests of honest weights and measures as the result of the enforcement of this law has been remarkable. Shipments of commodities, which heretofore showed variances of thousands of pounds, are today being transferred within a remarkable tolerance of accuracy. In several instances, however, conditions have been found which called for stern measures, and where such conditions have been encountered, they have been dealt with effectively. In one instance a reweigh of grain resulted in approximately 180,000 pounds of barley being returned to the farmers. Approximately 112 cases of weight variances have been submitted, and every case has been disposed of to the apparent satisfaction of all persons concerned.

All wagon scales and railroad scales employed in the weighing of bulk commodities are carefully inspected and tested, and the person qualifying as a public weighmaster is made to understand that the apparatus must be given care and attention at all times, and the platform must be kept clean in order that the greatest efficiency from the apparatus may be obtained, and he is seriously admonished that the employment of the apparatus must be attended with his fullest concern and the record of weight must be absolutely honest.


DEPARTMENT OF WEIGHTS AND MEASURES
NAME OF PUBLIC WEIGH-MASTER
EUREKA
PUBLIC WEIGH-MASTER
STATE OF CALIFORNIA

State Public Weighmaster Seal.

Among those who have qualified as public weighmasters are included the sugar refineries, steamship companies, manufacturers, warehousemen and public weighers.

INSPECTION OF STATE INSTITUTIONS.

Section 10 of Chapter 597 provides that "The State Superintendent, or his deputy, shall at least once annually, and as often as requested by the State Board of Control, or the executive officers of the state institutions, test the scales, weights and measures used in checking the receipt and disbursement of supplies in every institution conducted by the state, and shall report in writing his findings to the executive officer of the institution concerned and to the State Board of Control."

Conforming to the provisions of this section, I caused the inspection of the weighing and measuring devices employed in all state institutions in the state of California, which institutions included the state hospitals, penal institutions, institutions of learning, and Agricultural Park, and many of the state offices wherein apparatus is employed.

While the apparatus employed at the state institutions is rarely used to weigh commodities for sale, they are constantly employed in reweighing and checking commodities delivered at the institutions, and in this respect they are a most important utility to the institution and to the state. Through the employment of the weighing and measuring apparatus is afforded the only medium by which the state institutions are enabled to protect themselves against short weight and short measure, and they must be accurate in order to do justice to the merchants' scales against which they weigh. During the inspection we made it a special object to confer with the person under whose immediate direction the weighing of commodities came, advising him of the necessity of the constant employment of the apparatus, also relative to its care and upkeep. In this respect I beg to recommend that a substantial working plan be inaugurated between this department and

Outer Office, San Francisco Department of Weights and Measures, the State Purchasing Department, to the end that all complaints relative to the short delivery of commodities by any person, under contract, or by direct sale to the state, be referred to this department for investigation and disposed of as the circumstances may warrant.

The state, like any individual person, in the purchase of commodities, should be fully safeguarded as to quantity under the provisions of the Weights and Measures Act.

Attached hereto you will please find a full report of inspections.

INSPECTION OF APPARATUS IN STATE INSTITUTIONS, 1916.

Operation	Scales	Measures	Weights
Inspected	243	51	632
Corrected	105	0	118
Condemned for repair	17	0	0
Destroyed	60	18	107
Sealed	166	33	525

Miscellaneous.

Institutions visited, 23.
Milk bottles inspected, 2,800.
Steel yards inspected, 4.

CONFERENCES.

Under the direction of this department, two annual conferences have been held. One was held in the board room of the Harbor Commission in San Francisco on August 23, 24 and 25, 1915, and one in the assembly chamber of the State Capitol on September 4, 5 and 6, 1916.

The value of these conferences as educational and instructive mediums can not be overestimated. The diversified duties incumbent on the weights and measures officials are of technical, mechanical and scientific nature, and closely associates him and his work with the commercial, industrial and scientific, as well as the economic conditions of our state. The highest standard of efficiency should be maintained by him in the conduct of his department of county government, in order that it may be the useful and beneficial medium to the commercial interests, as well as the effective protective force to the common people, who can least protect themselves against short weight and measure evils.

During these conferences many problems relative to weights and measures, standardization of commodities, general policies of enforcement, federal and interstate trade regulations, tolerances and specifications, mechanical construction of apparatus, were introduced and discussed.

During the conferences all new types of weighing and measuring apparatus employed in the avenues of trade are experted by the manufacturers and the officials are given an excellent opportunity to thoroughly familiarize themselves with their construction.

Illegal Measures and Scales Condemned by C. E. Tucker of Stanislaus County.

Lectures on scientific subjects appertaining to weights and measures were provided and the delegates are enabled to learn collectively from men who have made the subject of weights and measures a life study and from men in public service particularly qualified to express themselves on the subject of weights and measures.

The last conference was honored by the presence of Governor Hiram Johnson, who, in his address, left a moral impression on the minds of the officials that will be long lasting. His thorough familiarity with the objects and purposes of the work of the weights and measures officials was most pleasantly acknowledged. Quoting from his address he said: "I appreciate, more than I can tell you, the work that you gentlemen are now doing in the State of California. You have been able to change the viewpoint of the public relative to the enforcement of state laws and you have been able to show them wherein protecting them against dishonest methods is a benefit to them as a whole. Go on with the work, for it is a grand work. It does not hurt anybody to be honest, and this government is with you in your work of compelling every man connected with the commercial world to be honest. Continue on in this policy."

There were present at both of these conferences all of the weights and measures officials in the state of California excepting six. It is gratifying to me to express my appreciation of the liberal attitude on the part of the county boards of supervisors in permitting their attendance.

Your Superintendent was extended the privilege of accepting the invitation of the National Bureau of Standards to attend its annual conference held in Washington, D. C., May 23, 24, 25 and 26, 1916. This conference consisted of the executive heads of the various state weights and measures departments and its value as an educational force in the interests of the highest standard of efficiency and thorough knowledge of subjects relative to weights and measures in general can not be overestimated. This state department was honored by the selection of your State Superintendent by the conference as a member of its executive committee and by placing him on a number of its most important committees.

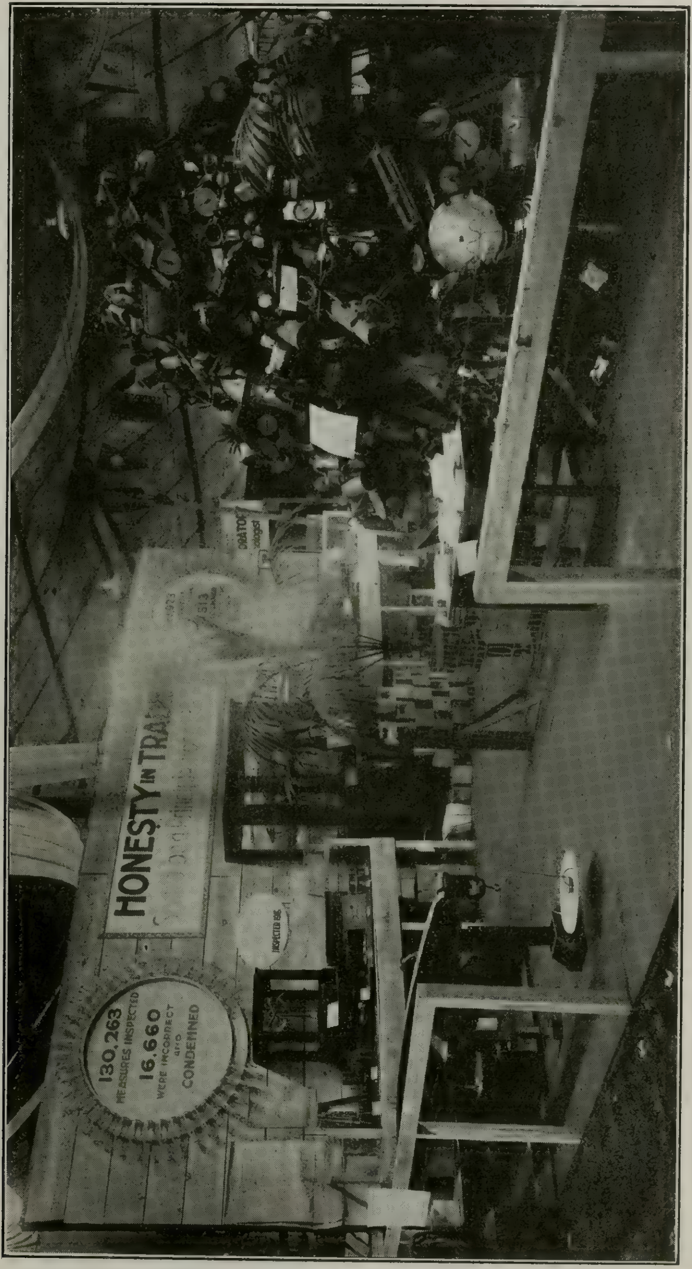
EDUCATIONAL WORK AND PUBLICITY.

From the inception of this department, the broadest plan of public education relative to weights and measures was inaugurated, which policy has continued. The diversified character of the work associated it with nearly every phase of commercial endeavor, and while there were a great number of trade customs and conditions calculated to be corrected through the enforcement of the law, a great number of these customs and conditions were due to ignorance and carelessness, while a relatively small proportion was due to motives and intentions which were dishonest.

I prepared and caused to be printed a pamphlet headed "Making Honesty," and it is not exaggerating to say that this pamphlet obtained

Educational Exhibits at State Fair, September, 1916.

a press circulation upward of several million. It was requested by several hundred public libraries and did a great deal towards inaugurating a moral force in the interests of honest weights and measures.



Educational Exhibit at State Fair, September, 1916.

All press expressions relative to weights and measures were carefully noted, and where there appeared to be a misunderstanding, correspondence fully covering the subject matter was prepared and forwarded.

Your Superintendent has embraced every opportunity to address commercial bodies and educational institutions, specializing on any phase of the work calculated to be of the most interest.

During the week beginning with October 22d, this state department, in cooperation with all county departments, inaugurated an "Honest Weights and Measures Week." During this week the clergy of the state was appealed to, requesting that they make "Honest Weights and Measures" a subject for their sermons on Sunday, October 22d. During this week all weights and measures officials were detailed on educational work in their respective jurisdictions. The institutions of learning in the counties were visited and lectures were delivered. Commercial bodies and other institutions afforded a substantial source for our educational efforts, and in some instances the sealers spoke from the pulpit.

Personally during this week, known as "Honest Weights and Measure Week," I addressed in the neighborhood of 30,000 school children in the upper grades.

The slogan adopted during the week was "Honesty in Trade should be a Principle and not a Policy."

An educational exhibit was installed this year at the State Fair, calculated to present effectively to the public the useful work of their Department of Weights and Measures. A comprehensive booklet dealing with the achievements of the department during the past year was distributed.

The public press of the state has extended to this department a full measure of consideration and privilege, and I desire to make grateful acknowledgment of its valuable favors. I contend that the success and usefulness of this department is largely due to its substantial support.

REPORTS OF COUNTY SEALERS.

The county departments of weights and measures are today permanent county institutions. While the jurisdiction of a county sealer is limited to his respective county, there is no conflict of authority. The substantial cooperation of the county departments with this state department has resulted in a perfect uniformity of enforcement and working conditions, based on harmony and the fullest cooperation, and it is with a deep sense of gratefulness that I embrace this opportunity to make public expression in this respect.

In the large and more densely populated counties, where the work requires the constant employment of the sealer, the officials have developed the highest standard of efficiency. Their serious application to weights and measure problems which trouble industry, have made their service a valuable asset to the people of the county.

Mrs. R. D. Johnson, Sealer for Humboldt County.

The practical enforcement of the Weights and Measures Act calls for the greatest diplomacy and tact on the part of the weights and measure officials, due to the fact that they are putting into operation what may be considered one of the most drastic laws that has ever been enforced in the state, and while the law vests them with unusual authoritative powers, these powers have never been misused or abused. Their deportment in general has been excellent and the conduct of their departments has been attended with dignity becoming public servants. Time and space does not permit me to here make mention of the vast amount of work actually performed.

Tried and Found False by Geo. P. McPhee, Sealer for Orange County.

Forty regulatory opinions, promulgated and issued by this department, providing for weights and measures regulations, based on the provisions of the various weights and measures laws, have been put into operation by their efforts. Hundreds of investigations of complaints have had their careful concern.

The accompanying report of inspections refer only to that part of their duties relative to the inspection of weighing and measuring devices and the inspection of containers.

Each county is a unit in the administrative policy of this department, harmoniously associated, with a common object—that of making the work of the department the useful work in the interests of all the people, which they expect and have a right to demand.

Modern Apparatus Employed in Kern County. L. H. B. Farr, Sealer.

The following report of the inspecting, adjusting and sealing of apparatus, and the inspection of containers, clearly and substantially

Condemned to Safeguard the Public in San Joaquin County, O. T. Melton, Sealer.

demonstrates the necessity for this work. These reports deal with every type and character of weighing and measuring devices, including the most sensitive instruments, commercial apparatus, platform, dormant and railroad track scales, measures of every character and construction, scientific apparatus, linear measures and containers.

The great number of confiscations reported is largely due to the pioneer conditions encountered. There is, however, no complaint in the records of this department of any merchant or person contending that the condemnation of their apparatus was unjustified.

"Weight" and "Measure" Defined.

''Weight'' is a mode of estimating weight or mass; a system of simply related units used for this purpose.

A ''measure'' is a unit of measurement, especially a unit of length, area, or volume. In its primary and ordinary meaning, weight is the quantity of heaviness, the quality of being heavy, or the degree and extent of downward pressure under the influence of gravity, or the quantity of matter as estimated by the balance or scale.

Federal Regulation of Weights and Measures.

Under the constitution of the United States, congress is given power to establish uniform weights and measures. This power it has never exercised, and until it is exercised, the respective states may for themselves regulate weights and measures. But, by a joint resolution adopted June 14, 1836, provision was made for sending to each state a full set of standards. These standards were early adopted by some states, and have continued in force ever since, and in every state in the Union weights and measures have been constantly governed either by a standard established by a state statute, or by the common law of the state.

In sales of particular articles, and for the protection of the public in business dealings, certain articles, such as coal, cordwood, lumber and shingles, are frequently required to be weighed, measured, or surveyed, unless the parties otherwise agree, and penalties are imposed for violations of such requirements. Similarly, certain articles may be required to conform to a certain weight or dimension, and to be sold by weight or measure, and in no other manner. Such statutes usually, distinctly, and in terms, relate to sales only and are valid police regulations.

APPARATUS INSPECTED, 1915.

Scales.

County	Counter				Spring				Computing			
	Sealed	Corrected	Out of order	Condemned and confiscated	Sealed	Corrected	Out of order	Condemned and confiscated	Sealed	Corrected	Out of order	Condemned and confiscated
Alameda	319	275	125	49	563	502	196	142	1,103	892	295	41
Alpine	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Amador	158	63	0	1	115	90	1	26	39	15	1	0
Butte	105	84	17	14	158	8	4	104	80	64	19	2
Calaveras	65	50	0	11	111	61	0	74	45	32	0	3
Colusa	77	40	5	27	94	46	0	47	41	27	5	10
Contra Costa	209	61	4	3	270	151	26	39	265	171	24	1
Del Norte	19	4	0	1	1	0	0	5	9	2	2	1
El Dorado	10	2	0	0	4	1	0	5	20	2	0	0
Fresno	122	61	18	1	130	65	89	88	178	89	46	11
Glenn	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Humboldt	15	11	0	5	12	8	0	30	81	53	0	10
Imperial	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Inyo	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Kern	76	45	0	11	22	12	0	96	206	93	5	7
Kings	14	4	1	2	9	1	1	17	95	89	14	0
Lake	16	3	0	0	2	0	0	1	39	6	2	0
Lassen	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Los Angeles	1,107	556	163	96	2,289	1,151	50	437	1,637	841	131	25
Madera	18	0	1	0	7	0	4	0	48	4	12	0
Marin	143	65	26	29	82	26	38	76	95	51	31	1
Mariposa	2	2	5	2	5	4	4	3	7	7	3	0
Mendocino	118	41	4	7	132	56	0	60	85	56	6	0
Merced	82	58	95	19	49	14	123	102	80	59	63	0
Modoc	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Mono	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Monterey	72	54	10	12	51	40	7	23	145	118	8	2
Napa	56	1	0	0	16	0	0	6	41	0	0	0
Nevada	13	1	1	0	7	5	0	2	11	5	1	0
Orange	72	41	2	20	75	49	2	28	189	120	20	6
Placer	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Plumas	14	8	0	0	1	0	1	5	5	2	1	0
Riverside	19	11	5	0	18	15	8	8	18	7	4	0
Sacramento	316	228	358	99	480	101	786	677	417	87	156	48
San Benito	40	10	3	7	36	2	5	39	64	11	17	3
San Bernardino	140	89	0	0	26	12	0	31	122	72	0	0
San Diego	654	439	161	87	1,191	837	96	291	941	675	252	102
San Francisco	1,529	763	73	203	2,789	1,229	192	414	1,516	633	149	8
San Joaquin	249	64	100	35	309	32	207	196	321	81	25	2
San Luis Obispo	30	10	0	3	24	6	0	0	98	45	0	11
San Mateo	165	116	53	38	139	84	18	11	252	188	27	2
Santa Barbara	168	29	29	4	74	3	3	83	169	12	12	4
Santa Clara	315	121	0	36	148	17	0	35	349	94	9	8
Santa Cruz	161	68	69	16	153	58	68	106	111	74	68	3
Shasta	123	66	4	27	49	11	0	197	66	25	3	0
Sierra	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Siskiyou	149	92	19	0	26	19	16	103	95	66	19	0
Solano	74	53	22	9	38	34	3	24	104	82	25	5
Sonoma	294	15	25	26	149	1	9	128	294	40	27	11
Stanislaus	152	152	47	29	112	340	195	110	182	168	83	6
Sutter	35	35	35	8	10	10	10	26	24	24	24	6
Tehama	67	6	2	3	3	0	2	9	44	3	4	2
Trinity	31	31	0	1	3	3	0	0	11	11	0	0
Tulare	149	130	7	3	86	54	2	87	178	138	9	0
Tuolumne	19	15	14	11	6	3	0	15	32	21	5	0
Ventura	83	69	17	6	33	13	1	31	28	19	2	0
Yolo	72	10	0	0	34	3	0	3	86	15	2	0
Yuba	18	10	0	2	11	1	0	22	45	30	1	4

Testing Milk Bottles, by Chas. M. Fuller, Sealer for Los Angeles County.

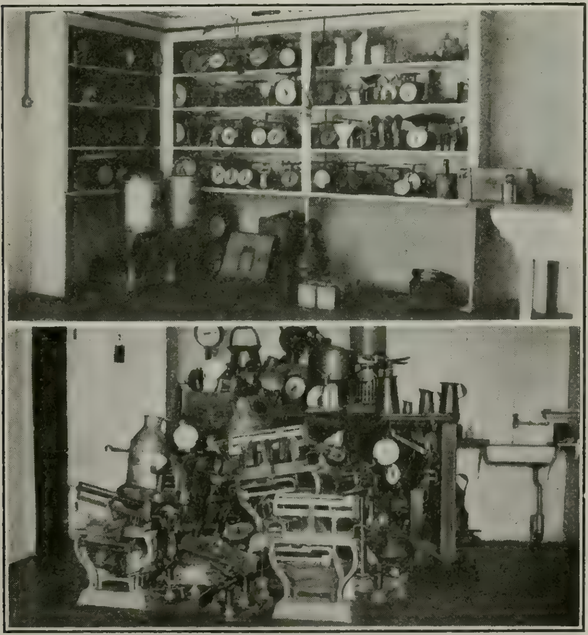
These Will Cheat No More. A Corner of San Francisco County Department.

APPARATUS INSPECTED, 1915.

County	Platform scales				Weights			
	Sealed	Corrected	Out of order	Condemned and confiscated	Sealed	Corrected	Out of order	Condemned and confiscated
Alameda	468	372	151	32	1,488	1,345	62	113
Alpine								
Amador	339	187	3	0	1,704	144	0	54
Butte	250	185	43	18	971	98	0	240
Calaveras	164	84	0	19	596	0	0	35
Colusa	140	105	41	63	863	0	0	125
Contra Costa	728	414	60	0	3,289	923	1	13
Del Norte	23	9	0	3	124	0	0	25
El Dorado	25	6	0	0	125	0	0	0
Fresno	438	204	105	2	1,331	230	130	17
Glenn								
Humboldt	124	97	0	13	167	0	0	68
Imperial								
Inyo								
Kern	250	150	21	12	1,118	467	0	0
Kings	110	80	38	10	398	0	0	157
Lake	61	13	4	6	264	3	0	169
Lassen								
Los Angeles	1,671	879	277	173	8,858	378	178	734
Madera	124	9	37	1	731	31	31	31
Marin	153	95	36	27	810	298	101	1,232
Mariposa	7	1	1	1	20	0	3	3
Mendocino	186	100	24	3	854	262	0	119
Merced	185	157	248	29	866	348	444	89
Modoc								
Mono								
Monterey	260	202	45	8	971	62	15	38
Napa	117	5	11	5	556	50	0	3
Nevada	24	5	2	1	225	68	0	65
Orange	395	259	23	77	1,380	26	0	102
Placer								
Plumas	21	15	0	2	175	37	0	3
Riverside	104	78	37	0	68	11	7	3
Sacramento	625	196	380	127	2,354	1,089	1,896	927
San Benito	200	47	28	6	704	127	8	90
San Bernardino	149	91	0	4	717	0	0	20
San Diego	903	684	200	26	4,894	660	0	416
San Francisco	1,599	916	212	147	7,301	889	0	375
San Joaquin	742	189	140	16	3,028	237	90	61
San Luis Obispo	141	55	0	8	575	118	0	3
San Mateo	288	219	14	2	1,429	270	0	173
Santa Barbara	302	79	80	8	60	40	40	1
Santa Clara	538	291	25	13	2,457	461	0	201
Santa Cruz	226	227	227	4	1,339	555	555	582
Shasta	204	132	6	8	1,297	156	0	32
Sierra								
Siskiyou	273	188	62	0	846	221	622	0
Solano	208	160	109	13	737	0	63	488
Sonoma	582	26	13	15	2,879	6	0	101
Stanislaus	411	407	160	45	1,956	289	440	412
Sutter	100	100	104	33	501	305	304	53
Tehama	101	30	10	0	651	245	55	7
Trinity	23	18	0	0	124	112	0	15
Tulare	288	229	25	1	1,509	826	0	10
Tuolumne	19	19	4	4	108	25	0	17
Ventura	168	150	11	15	767	216	0	0
Yolo	221	35	3	5	948	121	0	0
Yuba	95	70	19	17	382	135	0	33

CONDEMNED
COUNTY
os Angeles County Sealer, Chas. M. Fuller, bringing in a truckload
f several thousand condemned milk bottles

Short Measure Milk Bottles Condemned by Los Angeles County Sealer.



Scales and Measures Condemned by W. E. Crane, Sealer for San Diego County.

APPARATUS INSPECTED, 1915.

Measures.

County	Lineal				Liquid			
	Sealed	Corrected	Out of order	Condemned and confiscated	Sealed	Corrected	Out of order	Condemned and confiscated
Alameda	221	0	367	0	15,607	10	0	622
Alpine	-------	-------	-------	-------	-------	-------	-------	-------
Amador	83	51	0	0	360	0	0	64
Butte	0	0	0	0	530	10	18	156
Calaveras	0	0	0	0	508	0	0	132
Colusa	92	0	0	0	2,533	0	0	399
Contra Costa	42	2	2	1	1,252	5	90	360
Del Norte	2	0	0	0	17	2	0	4
El Dorado	0	0	0	0	15	0	0	0
Fresno	27	0	10	0	1,015	29	193	89
Glenn	-------	-------	-------	-------	-------	-------	-------	-------
Humboldt	1,198	0	0	0	441	0	0	181
Imperial	-------	-------	-------	-------	-------	-------	-------	-------
Inyo	-------	-------	-------	-------	-------	-------	-------	-------
Kern	404	376	0	0	848	0	0	295
Kings	0	0	0	0	92	0	0	2
Lake	17	2	0	0	100	23	0	13
Lassen	-------	-------	-------	-------	-------	-------	-------	-------
Los Angeles	395	5	0	74	1,403	66	8	525
Madera	67	10	0	0	90	6	13	3
Marin	28	0	2	4	755	0	0	174
Mariposa	26	7	2	2	20	2	3	1
Mendocino	222	27	0	0	301	0	0	85
Merced	30	6	10	4	3,138	78	204	142
Modoc	-------	-------	-------	-------	-------	-------	-------	-------
Mono	-------	-------	-------	-------	-------	-------	-------	-------
Monterey	10	1	1	0	1,123	0	0	33
Napa	0	0	0	0	45	0	0	0
Nevada	2	0	0	0	32	0	72	8
Orange	16	1	0	3	260	0	0	411
Placer	-------	-------	-------	-------	-------	-------	-------	-------
Plumas	23	18	0	0	26	1	0	3
Riverside	0	1	0	1	156	50	0	8
Sacramento	13	0	0	0	2,097	0	0	2,853
San Benito	342	0	0	27	276	3	1	39
San Bernardino	0	0	0	0	220	0	0	51
San Diego	23	0	0	12	4,292	0	0	410
San Francisco	16,329	0	0	695	8,493	0	0	2.221
San Joaquin	107	52	3	0	7,259	0	1	131
San Luis Obispo	0	0	0	0	125	0	0	179
San Mateo	136	38	0	23	14,745	0	0	2 000
Santa Barbara	47	0	0	0	875	3	3	54
Santa Clara	0	0	0	0	1.620	81	0	211
Santa Cruz	1,284	41	133	215	1,634	35	122	272
Shasta	72	55	0	0	726	0	0	504
Sierra	-------	-------	-------	-------	-------	-------	-------	-------
Siskiyou	86	77	91	0	5.970	0	239	197
Solano	1	0	0	0	264	0	0	350
Sonoma	938	0	0	1	3.487	0	0	322
Stanislaus	418	0	43	8	3,923	2	246	1,094
Sutter	5	5	5	4	8	3	70	70
Tehama	7	4	0	1	327	0	0	38
Trinity	16	0	0	0	47	0	0	19
Tulare	0	0	0	0	930	3	0	390
Tuolumne	13	4	0	0	173	0	2	44
Ventura	14	5	0	0	961	30	0	60
Yolo	7	1	0	0	402	0	0	63
Yuba	0	0	0	0	163	0	0	54

APPARATUS INSPECTED, 1915.

Miscellaneous.

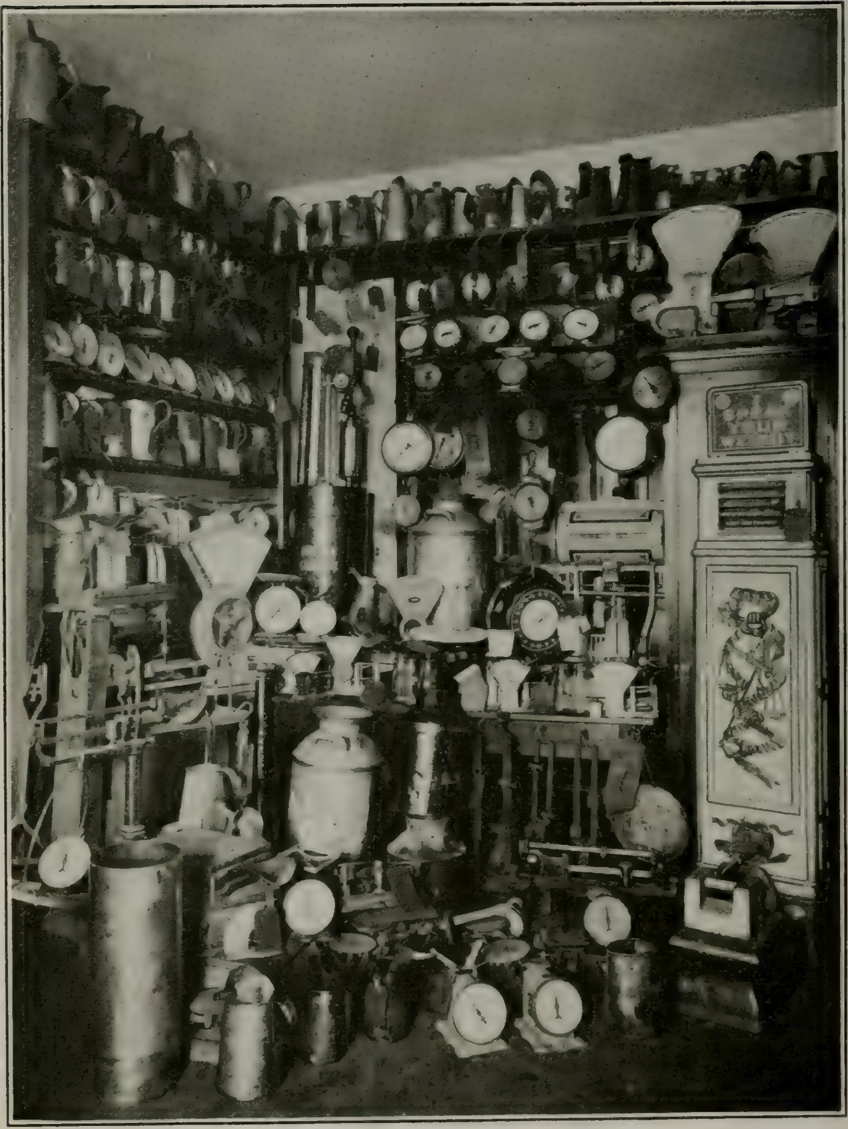
County	Measuring pumps				Milk bottles			Containers inspected		
	Sealed	Corrected	Out of order	Condemned and confiscated	Inspected	Correct	Condemned and confiscated	Heavy	Correct	Light
Alameda	48	42	9	0	396,601	322,968	73,633	60	396	178
Alpine										
Amador	13	8	0	0	118	0	0	0	640	0
Butte	26	13	2	0	1,363	1,256	107	0	0	0
Calaveras	6	0	0	0	0	0	0	0	52	0
Colusa	26	23	8	7	0	0	0	0	1,136	222
Contra Costa	43	15	9	0	2,288	1,828	460	125	14	13
Del Norte	5	4	0	0	325	0	0	0	0	0
El Dorado	3	0	0	0	0	0	0	4	65	10
Fresno	154	99	15	1	6,363	0	0	237	979	2,618
Glenn										
Humboldt	46	22	0	0	0	0	0	0	3,700	0
Imperial										
Inyo										
Kern	45	30	0	0	24,429	16,688	7,731	0	83	1,662
Kings	15	13	0	0	1,182	1,034	148	0	0	538
Lake	16	2	1	1	0	0	0	0	9	0
Lassen										
Los Angeles	353	240	34	0	31,456	23,106	8,350	1,713	152	1,078
Madera	17	6	5	0	0	0	0	0	0	0
Marin	124	51	0	12	23,194	21,716	1,478	35	3,111	227
Mariposa	2	1	2	0	0	0	0	0	98	31
Mendocino	25	8	0	0	685	0	0	205	948	235
Merced	17	17	17	0	0	0	0	0	37	0
Modoc										
Mono										
Monterey	54	42	4	0	0	0	0	0	110	0
Napa	16	0	0	0	0	0	0	0	0	0
Nevada	0	0	0	0	274	0	0	13	1,289	10
Orange	198	11	7	5	18,324	15,237	3,087	0	384	360
Placer										
Plumas	4	4	0	0	0	0	0	0	57	46
Riverside	77	70	5	0	8,000	6,000	2,000	0	139	35
Sacramento	99	39	41	2	1,611	1,309	302	25	4,709	101
San Benito	8	0	1	0	102	102	0	0	42	0
San Bernardino	62	53	0	0	0	0	0	0	396	0
San Diego	318	233	86	0	121,450	111,978	9,472	15	252	99
San Francisco	306	209	18	3	466,725	430,432	36,293	0	27567	1,204
San Joaquin	163	75	8	0	1,369	1,024	345	0	2,365	16
San Luis Obispo	22	6	0	0	0	0	0	0	0	0
San Mateo	166	121	2	0	8,821	7,042	1,779	0	3,394	65
Santa Barbara	56	33	33	0	1,970	1,931	39	0	40	6
Santa Clara	112	35	0	0	68,540	63,356	5,184	0	0	0
Santa Cruz	107	65	65	0	4,358	4,173	185	56	116	32
Shasta	24	19	0	0	1,577	1,371	206	0	0	0
Sierra										
Siskiyou	13	2	10	0	0	0	0	0	480	1,120
Solano	35	27	0	0	5,263	1,125	4,138	0	0	0
Sonoma	123	103	0	0	820	760	60	0	307	0
Stanislaus	99	93	96	6	3,824	3,172	652	11	207	1,368
Sutter	12	9	13	6	0	0	0	0	0	400
Tehama	17	6	6	2	400	398	2	0	356	38
Trinity	0	0	0	0	0	0	0	7	215	21
Tulare	76	44	10	0	10,588	8,488	2,100	0	0	0
Tuolumne	0	0	0	0	0	0	0	0	0	0
Ventura	23	12	0	0	2,749	2,749	0	0	0	0
Yolo	64	10	0	0	3,711	3,688	23	0	0	0
Yuba	17	5	0	2	108	108	0	0	0	0

Fraudulent Scales Junked by H. P. Jayne, Sealer of Fresno County.

APPARATUS INSPECTED, 1916.

Scales.

County	Counter				Spring				Computing			
	Sealed	Corrected	Out of order	Condemned and confiscated	Sealed	Corrected	Out of order	Condemned and confiscated	Sealed	Corrected	Out of order	Condemned and confiscated
Alameda	320	247	163	84	323	201	132	173	761	645	169	57
Alpine	1	0	0	1	0	0	0	1	0	0	0	0
Amador	33	4	4	2	28	4	0	12	14	0	0	1
Butte	201	102	14	10	99	12	0	66	100	30	0	7
Calaveras	83	14	4	5	31	2	12	11	43	4	7	2
Colusa	93	17	5	2	57	11	1	2	47	22	6	0
Contra Costa	106	55	7	1	70	20	7	13	189	89	21	1
Del Norte	10	1	0	0	2	0	0	2	8	2	0	0
El Dorado	16	1	0	1	10	2	0	1	32	0	0	0
Fresno	585	250	141	41	190	68	79	77	269	107	49	1
Glenn	65	50	0	4	25	10	0	12	77	50	0	2
Humboldt	1	1	0	0	7	0	0	0	37	1	0	1
Imperial	60	1	5	7	27	0	6	44	86	27	23	4
Inyo	70	50	0	3	25	15	0	12	33	30	0	0
Kern	95	60	0	13	60	40	0	30	216	175	0	10
Kings	25	15	0	3	6	3	0	1	31	25	1	1
Lake	32	7	0	0	1	5	2	0	22	6	0	0
Lassen	27	7	0	0	6	4	0	5	13	10	0	0
Los Angeles	1,557	953	224	163	6,733	4,014	84	861	2,581	2,295	348	48
Madera	18	8	0	1	10	3	0	0	45	14	3	0
Marin	164	76	11	12	110	38	10	31	217	88	12	2
Mariposa	25	18	6	5	4	2	3	6	11	6	0	0
Mendocino	90	0	0	1	73	0	0	18	86	0	0	0
Merced	15	11	0	1	4	3	1	5	19	13	2	0
Modoc	40	25	0	5	4	0	0	11	36	17	2	1
Mono	5	0	0	0	4	0	0	0	7	0	0	0
Monterey	47	15	3	2	30	5	1	2	77	29	2	0
Napa	55	5	0	0	9	0	0	0	8	0	0	0
Nevada	63	18	0	5	29	17	0	20	55	36	1	1
Orange	140	21	3	17	83	16	0	29	272	70	38	9
Placer	14	5	0	0	4	0	0	1	10	4	0	0
Plumas	8	3	1	1	0	0	0	0	8	7	1	0
Riverside	103	16	3	13	52	2	52	14	85	52	25	6
Sacramento	233	60	99	19	485	168	245	77	393	146	190	44
San Benito	23	10	0	0	7	5	0	0	35	9	0	0
San Bernardino	83	4	0	1	36	3	0	5	212	30	0	1
San Diego	515	124	36	9	544	64	38	70	752	289	82	18
San Francisco	803	322	92	105	2,429	1,145	461	122	2,318	740	182	41
San Joaquin	204	56	15	6	129	35	15	40	218	106	7	2
San Luis Obispo	102	26	0	8	24	8	0	23	107	40	0	0
San Mateo	118	83	4	2	73	53	20	16	213	82	10	0
Santa Barbara	317	48	0	3	61	4	0	13	190	48	0	2
Santa Clara	210	200	0	3	144	100	0	7	261	200	0	0
Santa Cruz	196	53	22	1	242	56	33	32	180	91	32	0
Shasta	133	68	1	7	47	5	0	21	74	28	0	0
Sierra	22	6	0	5	19	3	0	31	21	5	1	0
Siskiyou	269	89	0	19	99	10	0	49	126	42	0	12
Solano	----	----	----	----	----	----	----	----	----	----	----	----
Sonoma	301	20	4	9	107	1	0	17	323	33	9	1
Stanislaus	180	28	8	6	233	6	79	29	142	52	6	4
Sutter	46	18	3	5	13	1	0	15	27	5	0	0
Tehama	108	5	7	5	53	4	9	11	68	13	1	0
Trinity	27	11	0	0	3	1	0	1	16	11	0	0
Tulare	142	40	9	2	41	12	38	11	193	83	8	0
Tuolumne	25	42	16	20	27	2	4	15	12	22	5	4
Ventura	57	41	0	5	17	4	0	7	44	36	2	0
Yolo	69	2	0	0	35	3	0	16	71	9	2	0
Yuba	41	19	10	7	19	6	10	13	50	18	2	0



A Few Confiscations by H. P. Jayne, Sealer for Fresno County.

Office of John L. Girt, Sealer for Sonoma County.

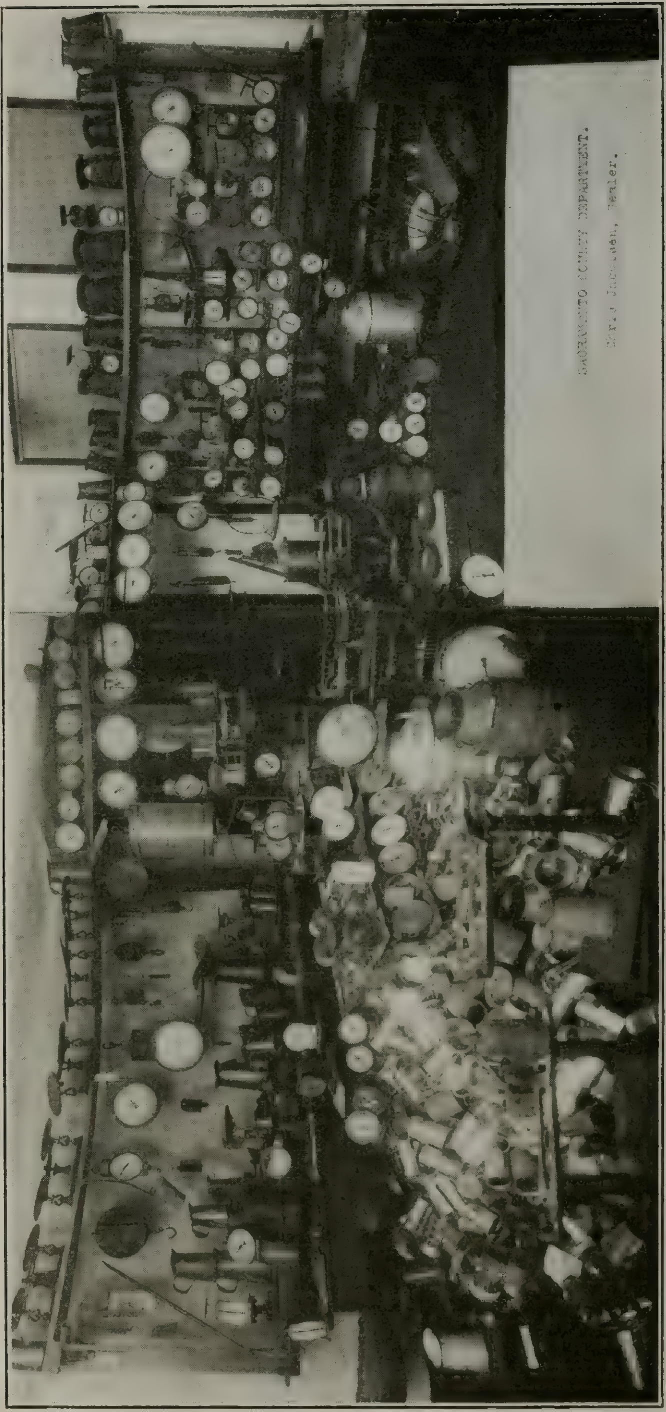
APPARATUS INSPECTED, 1916.

County	Platform scales				Weights			
	Sealed	Corrected	Out of order	Condemned and confiscated	Sealed	Corrected	Out of order	Condemned and confiscated
Alameda	444	372	246	137	3,016	646	88	524
Alpine	1	0	0	0	11	0	0	0
Amador	168	3	2	6	419	32	0	25
Butte	272	180	16	12	1,492	533	0	69
Calaveras	82	14	4	1	421	18	5	5
Colusa	140	36	9	0	790	38	0	4
Contra Costa	295	156	47	0	1,973	156	4	10
Del Norte	16	5	0	1	92	0	0	8
El Dorado	28	0	0	0	59	0	0	0
Fresno	944	627	173	6	3,883	701	0	260
Glenn	139	100	0	2	676	0	0	203
Humboldt	36	0	0	1	90	0	0	5
Imperial	140	14	6	14	484	2	0	19
Inyo	103	75	0	11	525	0	0	45
Kern	232	180	0	10	888	0	0	149
Kings	74	60	5	4	239	0	0	29
Lake	47	14	2	0	234	2	0	6
Lassen	27	7	0	0	187	0	0	2
Los Angeles	1,816	1,932	465	181	20,619	727	93	684
Madera	107	41	6	0	409	112	0	63
Marin	290	106	15	3	980	129	20	25
Mariposa	20	11	7	0	144	61	15	26
Mendocino	138	0	0	0	621	0	0	9
Merced	85	57	14	5	369	62	0	5
Modoc	84	73	1	4	452	8	0	30
Mono	15	0	0	0	0	0	0	0
Monterey	146	62	8	0	735	56	0	3
Napa	53	4	0	1	244	15	0	6
Nevada	86	36	4	5	614	91	0	164
Orange	435	162	71	18	47	6	0	26
Placer	19	14	0	0	158	29	0	0
Plumas	8	8	1	0	76	21	0	0
Riverside	171	24	24	5	739	8	0	18
Sacramento	417	189	296	107	1,834	141	238	95
San Benito	82	20	0	0	280	0	0	7
San Bernardino	279	27	0	7	654	0	0	0
San Diego	672	356	152	5	6,194	81	0	79
San Francisco	934	406	140	26	4,747	691	0	619
San Joaquin	471	265	101	27	2,734	190	0	154
San Luis Obispo	205	101	0	4	863	375	0	17
San Mateo	383	272	28	0	1,815	360	0	57
Santa Barbara	263	78	0	5	1,759	846	0	15
Santa Clara	186	100	0	1	932	243	0	55
Santa Cruz	358	202	40	2	1,902	768	0	17
Shasta	205	148	7	4	1,165	72	0	9
Sierra	47	17	3	10	131	17	3	10
Siskiyou	351	117	0	10	1,302	0	0	284
Solano	------	------	------	------	------	------	------	------
Sonoma	525	50	19	5	3,012	18	0	73
Stanislaus	536	241	129	26	2,142	134	425	114
Sutter	252	176	35	10	872	239	0	25
Tehama	163	32	5	1	1,001	33	20	20
Trinity	16	8	0	0	226	50	0	4
Tulare	305	139	46	0	1,523	116	17	17
Tuolumne	21	58	14	2	342	190	0	46
Ventura	137	136	2	0	573	37	0	0
Yolo	191	25	9	0	725	62	0	3
Yuba	164	77	42	16	580	107	0	146

APPARATUS INSPECTED, 1916.

Measures.

County	Lineal				Liquid			
	Sealed	Corrected	Out of order	Condemned and confiscated	Sealed	Corrected	Out of order	Condemned and confiscated
Alameda	229	229	436	226	535	139	226	290
Alpine	0	2	0	0	9	0	0	0
Amador	5	1	0	3	129	0	1	5
Butte	3	3	0	0	296	11	4	127
Calaveras	0	0	0	0	267	0	31	31
Colusa	61	1	0	0	524	17	1	93
Contra Costa	133	24	0	2	236	5	1	65
Del Norte	2	0	0	0	54	0	0	17
El Dorado	17	0	0	0	17	0	0	0
Fresno	23	7	0	0	797	96	7	92
Glenn	18	0	0	0	446	0	0	22
Humboldt	0	0	0	0	18	0	0	14
Imperial	5	0	0	0	139	11	11	18
Inyo	21	10	0	3	183	0	0	40
Kern	33	0	0	0	1,038	0	0	95
Kings	29	0	0	0	81	0	0	15
Lake	11	0	0	0	83	0	0	0
Lassen	10	4	0	3	34	0	0	6
Los Angeles	483	13	0	34	4,819	87	26	648
Madera	14	4	0	0	156	1	0	4
Marin	17	0	0	11	699	0	0	61
Mariposa	19	13	0	0	101	9	4	18
Mendocino	121	0	0	3	334	0	0	1
Merced	0	0	0	0	138	4	0	15
Modoc	38	11	0	0	173	0	0	47
Mono	0	0	0	0	5	0	0	6
Monterey	0	0	0	0	139	0	0	0
Napa	0	0	0	0	33	0	0	2
Nevada	103	20	0	1	403	0	0	170
Orange	0	0	0	0	252	2	11	15
Placer	0	0	0	0	54	0	0	19
Plumas	15	11	0	0	20	0	0	2
Riverside	51	0	0	4	280	8	34	48
Sacramento	28	0	3	3	2,053	0	696	696
San Benito	0	0	0	0	55	0	0	0
San Bernardino	0	0	0	0	239	0	0	0
San Diego	0	0	0	0	4,055	2	13	86
San Francisco	71	0	0	0	4,889	0	217	577
San Joaquin	16	0	0	0	1,636	13	15	70
San Luis Obispo	0	0	0	0	306	0	0	87
San Mateo	45	0	0	0	961	0	43	47
Santa Barbara	241	20	0	0	351	0	0	16
Santa Clara	0	0	0	0	231	0	0	25
Santa Cruz	992	35	0	8	1.380	36	37	20
Shasta	68	6	0	3	526	10	3	5
Sierra	3	11	0	7	69	0	0	100
Siskiyou	70	0	0	39	764	0	0	70
Solano	--------	--------	--------	--------	--------	--------	--------	--------
Sonoma	0	0	0	0	213	0	0	5
Stanislaus	80	0	2	3	1,336	3	121	75
Sutter	7	1	0	0	26	0	0	8
Tehama	336	16	0	0	352	0	0	15
Trinity	--------	--------	--------	--------	--------	--------	--------	--------
Tulare	0	0	0	0	952	0	192	96
Tuolumne	10	0	0	0	267	0	7	81
Ventura	14	7	0	0	333	10	0	29
Yolo	9	2	0	0	199	0	0	9
Yuba	3	0	0	0	263	2	0	38



Clean-up of Sacramento County by Chris Jacobsen, Sealer.

Incorrect Scales and Measures Condemned by P. H. Northby, Sealer for Colusa County.

APPARATUS INSPECTED, 1916.

Miscellaneous.

County	Measuring pumps				Milk bottles			Containers inspected		
	Sealed	Corrected	Out of order	Condemned and confiscated	Inspected	Correct	Condemned and confiscated	Heavy	Correct	Light
Alameda	103	74	25	0	135,048	132,744	2,304	1,812	4,834	1,705
Alpine	0	0	0	0	0	0	0	0	0	0
Amador	0	0	0	0	29	29	0	0	0	0
Butte	35	19	4	0	1,774	951	823	403	486	753
Calaveras	10	1	0	0	0	0	0	0	54	1
Colusa	40	21	4	0	3,331	3,257	74	41	583	165
Contra Costa	99	24	14	1	73	73	0	153	2	7
Del Norte	0	0	0	0	140	140	0	0	32	0
El Dorado	4	0	0	0	17	0	0	0	0	0
Fresno	225	103	19	1	14,485	14,485	0	77	9,867	478
Glenn	31	15	0	0	2,593	2,593	0	0	1,002	0
Humboldt	7	0	0	0	0	0	0	0	5,165	0
Imperial	23	14	3	0	153	139	14	27	44	25
Inyo	18	10	0	0	794	578	216	0	0	0
Kern	233	0	0	0	22,290	19,255	3,035	0	557	600
Kings	21	0	0	0	241	238	3	3	100	10
Lake	22	16	0	0	0	0	0	0	12	0
Lassen	7	4	0	0	0	0	0	136	0	0
Los Angeles	788	794	97	5	278,129	246,218	31,911	0	0	0
Madera	37	15	1	0	800	800	0	0	0	0
Marin	112	57	12	0	102,871	101,410	1,461	0	19,153	0
Mariposa	2	1	1	0	0	0	0	10	156	30
Mendocino	15	0	0	0	0	0	0	196	817	122
Merced	37	30	1	0	0	0	0	8	5,225	3
Modoc	18	14	2	0	425	425	0	7	1,792	65
Mono	2	0	0	0	0	0	0	0	0	0
Monterey	36	14	0	0	2,152	2,152	0	3	2	23,574
Napa	26	1	0	0	0	0	0	0	0	0
Nevada	15	8	0	0	783	783	0	35	4,827	7
Orange	185	67	24	1	31,383	30,345	1,038	19	287	446
Placer	18	17	0	0	0	0	0	0	0	0
Plumas	1	0	3	0	0	0	0	2	35	49
Riverside	30	16	5	1	13,430	12,220	1,210	0	564	377
Sacramento	133	39	50	10	29,914	29,912	2	157	6,556	469
San Benito	12	0	0	0	93	85	8	0	37	0
San Bernardino	79	14	0	0	0	0	0	0	0	1,598
San Diego	220	252	82	0	129,592	123,589	6,003	180	1,721	2,257
San Francisco	103	5	16	0	276,790	248,804	27,986	94	29,166	20,559
San Joaquin	75	56	14	1	13,219	12,132	1,087	100	1,399	3,655
San Luis Obispo	99	52	0	6	2,692	2,490	202	20	1,417	816
San Mateo	247	131	17	0	15,232	14,330	932	3,745	18,715	6,003
Santa Barbara	76	10	0	0	0	0	0	52	136	36
Santa Clara	79	107	3	0	0	0	0	0	0	0
Santa Cruz	98	47	13	0	1,407	1,372	35	136	617	190
Shasta	0	0	0	0	1,732	1,577	155	6	74	8
Sierra	3	5	1	0	0	0	0	0	40	12
Siskiyou	31	10	0	0	1,922	1,922	0	0	0	0
Solano	-----	-----	-----	-----	--------	--------	--------	-------	-------	-------
Sonoma	119	9	2	0	3,534	3,431	103	0	1,900	10
Stanislaus	98	39	7	3	10,037	6,428	3,609	379	8,737	1,850
Sutter	7	7	0	0	0	0	0	43	572	1,525
Tehama	30	5	1	0	2,196	2,196	0	114	591	35
Trinity	-----	-----	-----	-----	--------	--------	--------	-------	-------	-------
Tulare	97	57	9	0	4,623	4,329	294	0	0	0
Tuolumne	15	11	4	1	200	128	72	6	206	23
Ventura	21	16	0	0	242	223	19	2	0	0
Yolo	59	10	4	0	1,335	1,301	34	4	520	0
Yuba	25	12	1	0	151	106	45	20	25	330

COMPILATION OF INSPECTIONS, 1915 AND 1916.

	1915	1916
Total Scales Inspected	96,112	79,320
Total Scales Corrected	23,788	23,232
Total Scales Condemned for Repair	9,249	5,705
Total Scales Confiscated	7,488	3,723
Total Scales Sealed	55,587	46,660
Total Measures Inspected	133,463	46,438
Total Measures Corrected	1,185	917
Total Measures Condemned for Repair	2,015	2,182
Total Measures Confiscated	16,660	4,798
Total Measures Sealed	113,603	38,541
Total Weights Inspected	96,901	93,451
Total Weights Corrected	12,191	9,223
Total Weights Condemned for Repair	5,383	928
Total Weights Confiscated	8,094	4,288
Total Weights Sealed	71,233	79,012
Total Measuring Pumps Inspected	5,652	6,737
Total Measuring Pumps Corrected	1,922	2,230
Total Measuring Pumps Condemned for Repair	509	439
Total Measuring Pumps Confiscated	47	30
Total Measuring Pumps Sealed	3,174	4,038
Total Milk Bottles Inspected	1,383,698	1,096,314
Total Milk Bottles Correct	1,171,885	1,013,639
Total Milk Bottles Confiscated	211,813	82,675
Total Containers Inspected	68,089	278,190
Total Containers Heavy	2,506	8,490
Total Containers Correct	53,850	196,947
Total Containers Light	11,733	72,753
Total Prosecutions	163	103
Total Convictions	118	74
Total Acquittals	15	4
Pending	3	3
Total Establishments Visited	26,796	44,783
Total Certificates Issued	27,502	45,783

COMPILATION OF INSPECTIONS, 1915-1916.

APPARATUS INSPECTED, 1915-1916.

Grand Totals.

Scales Inspected	128,412
Sealed	102,247
Corrected	47,020
Out of Order	14,954
Confiscated	11,211
Weights Inspected	168,938
Sealed	150,245
Corrected	21,414
Out of Order	6,311
Confiscated	12,382
Measures Inspected	177,799
Sealed	152,144
Corrected	2,102
Out of Order	4,197
Confiscated	21,458
Measuring Pumps Inspected	8.237
Sealed	7,212
Corrected	4,152
Out of Order	948
Confiscated	77
Milk Bottles Inspected	2,480,012
Correct	2,185,524
Confiscated	294,488
Containers Inspected	346,279
Heavy	10,996
Correct	250,797
Light	84,486

STANDARDIZATION OF COMMON COMMODITIES IN CONTAINERS.

Chapter 597, under section 6, provides that "The State Superintendent of Weights and Measures may establish a standard net weight, or net measure, or net count of any commodity, produce or article."

It has not been construed that this authority and power vested in the State Superintendent was intended to give him arbitrary powers to establish a standard of weight, or a standard of measure of commodities, in conflict with common custom or usage, or to interfere with such custom or usage applied in the legitimate channels of trade, or where such custom and usage does not lend towards the perpetration of commercial misconduct, or violate the principle of fair and equitable competition. This department does, however, apply these powers in a desire to act as a public institution to safeguard the people against deception in weight and measure in the sale of common commodities, and prevent the reduction in the weight or measure of common commodities as a medium of competition, thereby effectively discouraging erroneous commercial policies which clearly facilitate the perpetration of fraud.

A number of states have enacted legislation providing for uniform weights and measures standards for common commodities. They have fixed the standard weight of a barrel of flour, a ton of coal, a cord of wood, etc. California has not legislated direct on this subject.

The necessity for the standardization of common commodities in the interest of legitimate trade and fair and equitable competition was forcibly emphasized as the most logical plan of affecting relief to honest merchants against indiscriminate and dishonest competition and in the effective safeguarding of the public against weights and measures fraud.

Before fixing any standard of weight or measure, this department made a full and careful investigation of all circumstances and conditions attending the manufacture, sale and distribution of the commodity concerned. Conferences were held, where a full and impartial hearing was extended to all manufacturers and merchants concerned, and in no case did this department arbitrarily fix a standard.

The fixing of a uniform standard measurement for a cord of wood at 128 cubic feet was preceded by a careful review of all conditions attending the sale of wood. It was presented in detail before the Annual Conference of the California Fuel Dealers' Protective Association and obtained their approval and endorsement. As a result of this standardization, all wood when sold, offered or exposed for sale in the state of California, is sold by cubic measurement, based on the standard cord of 128 cubic feet. Similar precaution and careful concern preceded the fixing of all other standards promulgated by this department.

The following regulations and standards have been promulgated and established under the authority of this department, which standards are now in force and effect:

MILK BOTTLES.

After extensive investigations relative to methods of manufacture, filling, marketing, and general employment of milk bottles in the avenues of trade, conditions conclusively demanded a uniform container in accordance with standard measure; also a definite establishment of contents at a fixed point. The standard gallon with its regular subdivisions, *i. e.*, gallon, half-gallon, quart, pint, and gill, were fixed; tolerances prescribed, and capacity fixed at one-eighth of an inch below the cap seat. Exemption was provided for the employment of service bottles for exclusive use in cafeterias of ten and twelve ounce capacities. This exemption provided for the indication on the container of the name of the cafeteria, and the employment restricted to service on the premises for sale with meals. Two hundred ninety-four thousand four hundred eighty-eight milk bottles have been confiscated, resulting in an estimated saving per annum of approximately $125,616.

BUTTER.

Extensive investigations and experiments established a number of customs attending the sale of butter when offered in containers, many of which in a general way facilitated the perpetration of fraud.

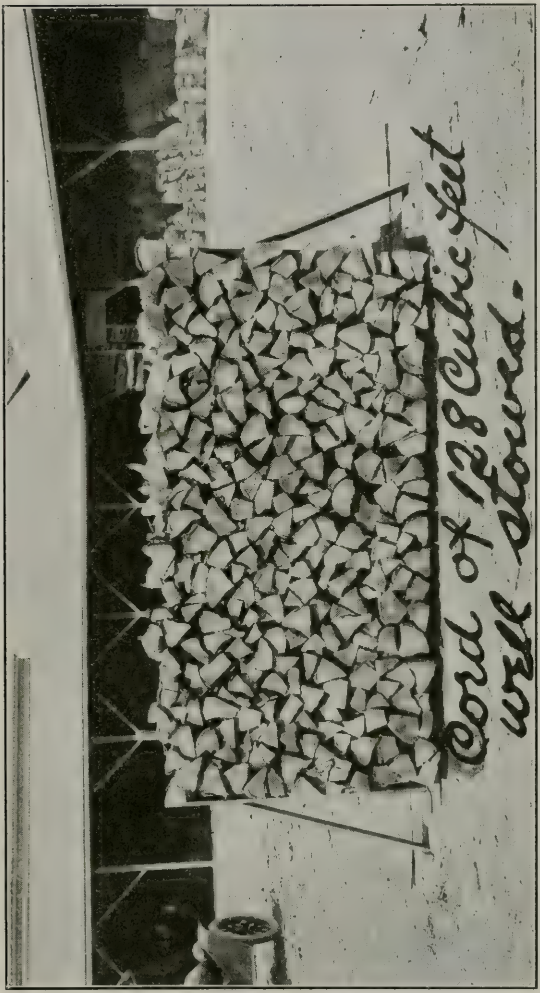
While the containers comply nominally with the requirements of the Net Container Act, a square weighing 30 ounces was of the same size in appearance as a 32-ounce square. Custom created demand for large and small squares, which was generally accepted to be one and two pounds. The general process of adjustment along educational lines resulted in a common adoption of uniform weight containers of one and two pounds, and as the result of general demand both from the creamery operators and the public, a standard weight for butter when sold in containers was fixed at one and two pounds. The saving to the public as the result of these standards is hard to estimate. Sealer Dolan, of San Francisco, in his report to the board of supervisors, estimates a saving to San Francisco county of $250,150.93. The inspection of the Federal Department of this commodity established even greater variance. It is safe to say that the minimum error in weight is today maintained as the result of rigid inspection.

COAL.

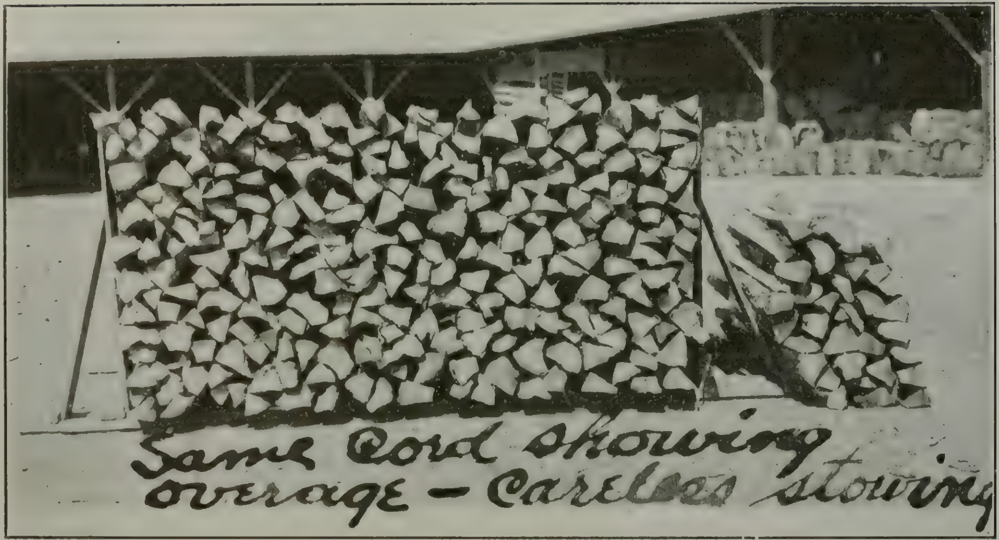
In fixing the standard weight for coal, and providing for its sale by avoirdupois weight, this department closed an avenue of error which has long been a menace to the public. Coal is usually sold by the sack or ton. A sack was generally estimated as 100 pounds. This quantity, however, was in most cases uncertain. A standard weight for coal in sacks has been fixed at 100 pounds net, and any coal offered, sold, or exposed for sale shall be sold by avoirdupois weight, 2,000 pounds to the ton, and vouchers specifying quantity shall accompany each delivery. These regulations apply to coal products in general. The effect of these regulations has been most beneficial in establishing fair competition in the sale of coal, and effectively protected the public against short weight. Coal inspections are invariably made at the yard, or when it is in course of delivery.

WOOD.

In most states the legislature has fixed a standard cord measure of 128 cubic feet. Our legislature undoubtedly intended to confer legal authority for establishing standards of this character when they delegated the powers as provided for in section 6, of Chapter 597, to the State Superintendent. Under these powers, the cord measure was established as a standard measure, and its dimensions fixed at eight feet long, four feet wide, and four feet high, with a cubical contents of 128 cubic feet.



A Full Cord Properly Piled.



A Cord. Demonstrating Careless Piling.

Regulations were prescribed providing that wood when measured should be well stowed, and prohibiting bulkheading in the measurement. Prior to the establishment of the standard, wood was sold by ricks, stacks, tiers, and other meaningless measurements adopted as the result of expediency. They were all termed "cords," the quantity delivered under the term varying from 48 cubic feet to 128 cubic feet. In inspecting complaints prior to the fixing of the standard, the deputy was compelled to first obtain the merchants cord contents. Today 128 cubic feet is uniform throughout the state. All wood is sold by cubical measurement, and vouchers accompanying each delivery clearly sets forth the quantity in cords or cubic feet. The enforcement of this standard has revolutionized the fuel wood business with the full approval of the public, as well as the honest dealer. Necessary trade exemptions have been provided for in the sale of kindling, obviating unnecessary restrictions on the dealer.

FLOUR.

The standard weight of a barrel of flour has been definitely fixed at 196 pounds net weight, and its regular subdivisions, *i. e.*, half barrel, 98 pounds; quarter barrel, 49 pounds, and eighth barrel, 24½ pounds, all packed net weight exclusive of the weight of container. This standard had the fullest approval of the milling industry of the state, and was effectively put into operation. Interstate millers packing flour in violation of this standard are today complying. A number of interstate shipments were prevented from distribution until the containers were filled to the required contents, thereby effectively protecting the state millers who are maintaining the standards, as well as preventing deception in quantity in the sale of flour.

OYSTER AND ICE CREAM PAILS.

Trade customs caused oyster and ice cream pails, generally adopted as portable conveniences, to be used as capacity measures. Manufacturers represented these containers as being accurate in accordance with the gallon standard and its regular subdivisions. This department, however, contended that these containers were not liquid capacity measures, and not subject to the tolerance adopted for liquid capacity measures. The department did prescribe the regulation, and same is now in force to the effect that paper pails may be used in the avenues of trade provided that they are clearly marked or indicated to contain a fixed capacity, which capacity shall approximate a quantity equivalent to the regular standard gallon or its regular subdivisions.

OLIVES.

The purpose of the enforcement of the Net Container Act is to protect purchasers of any commodity within its provisions against deception as to quantity or amount of commodity purchased, when such commodities are sold in containers. This department holds that olives is a food product within the meaning of the Net Container Act. When sold in a container, the true net weight of the olive should be indicated on the container to the exclusion of the weight of the brine, which in the opinion of this department, is not an edible within the meaning of the act. Prior to the adoption of this regulation, a packer could put ten ounces of olives in the container, 14 ounces of brine, indicating the contents as 24 ounces. Under the opinion of this department, the contents of containers of olives in brine must be marked with statement of the net weight of the olives exclusive of the weight of the brine.

SHINGLES.

The following regulations fixing the width of a standard shingle, and fixing the number or quantity of shingles which shall constitute a standard pack or bundle, is hereby established for the State of California as follows:

Cedar Shingles.

The standard width of a shingle, for the purpose of calculation, is hereby fixed at 4 inches. Five shingles shall constitute a course, allowing air space in each course not to exceed 1½ inches. Fifty courses, or a minimum count of 231 standard shingles shall constitute a standard bundle of cedar shingles, and there shall be no tolerance in deficiency allowed. A standard bundle of cedar shingles, when laid 4 inches to the weather, shall cover a minimum surface of 25 square feet.

Redwood Shingles.

The standard width of a shingle, for the purpose of calculation, is hereby fixed at 4 inches. Five shingles shall constitute a course, allowing air space in each course not to exceed 1½ inches. Forty courses, or a minimum count of 185 standard shingles, shall constitute a standard bundle of redwood shingles, and there shall be no tolerance in deficiency allowed. A standard bundle of redwood shingles, when laid 4 inches to the weather, shall cover a minimum surface of 20 square feet.

All shingles in bundles when sold, offered, or exposed for sale in the State of California, shall be packed in accordance with these standards, and such pack shall be known as a *standard bundle.*

TACK MEASURE.

In order to establish a uniform system of weights and measures, based on accuracy and in conformity to uniform standards of weights and measures, the so-called tack measure commonly employed in the sale of dry goods has been given the same inspection as other weighing and measuring devices. Investigations proved that no uniformity was maintained in the use of the tack measure. Apart from the possibility of inaccuracy in the arrangement of the tacks, measurements were made from the inside edge of the tack, center of the head, and outside edges. No system of measurement was found more carelessly used. The result of inaccuracy and carelessness was the cause of great loss to the merchant, as well as to the public. This is an expediency measure, established by custom. In order that uniformity and a maximum accuracy be obtained in the employment of this so-called tack measure, this department regulated that the so-called tack measure may be used as a measure in the sale of commodities, when it is accurate in accordance with the United States standard yard. The distance between the inside edge of the tack shall be one yard, and all measurements of the subdivision shall be obtained from the inside edge of the tack. No one measure shall be subdivided.

TAPE MEASURES.

Tape measures are manufactured with the basic principal of attaining the highest degree of accuracy possible. They are printed by scientific mechanical apparatus set to the finest point of uniformity in accordance with legal standards. There is, however, a conceded opinion on the part of manufacturers that it is impossible to manufacture a perfectly accurate measure, free from shrink and stretch, excepting perhaps in the steel tape. This department has prescribed specifications and established tolerances in accordance with which all tapes or tape measures and tape lines must be constructed. Steel tapes and metallic tapes constructed of linen or other cloth, and interwoven with metallic warp or metal painted, or otherwise covered with composition, are permitted for sale and distribution, and when employed in any manner excepting in the sale of commodities need not be officially inspected and sealed. Cotton tapes made exclusively of cloth are not permitted in the measurement of commodities intended to be sold. Twenty-seven thousand one hundred twenty-six lineal tapes have been inspected out of which 1,425 were found incorrect and condemned.

BERRIES.

The berry industry of the State of California has developed to such proportions that it is now classified as one of the large industries of the state and for which the state is particularly adapted. Serious efforts have, from time to time, been put forth by persons particularly interested in the welfare of this industry to standardize and fix uniform weights and sizes of containers wherein berries are offered for sale.

Since the inception of this industry, competition has been most unstable, and the interest of the public has never been safeguarded against deception. The size of the container has gradually grown smaller due to competition, and containers or berry boxes designed to misrepresent contents have not been uncommon. After a full and careful consideration with all customs and conditions attending the legitimate purposes and intentions of those engaged in this industry, together with a full and equitable consideration of the interest of the consuming public, the following standard weights of berries when sold in baskets have been fixed:

8 ounces, or ½ pound avoirdupois weight (minimum contents).
12 ounces, or ¾ pound avoirdupois weight (minimum contents).
16 ounces, or 1 pound avoirdupois weight (minimum contents).
28 ounces, or 1¾ pound avoirdupois weight (minimum contents).

The minimum contents of the berry box must approximate the true net weight in accordance with these standards, and no tolerance shall be allowed below the stated minimum weight. For trade convenience, the box or crate wherein berry baskets are shipped is construed as a container, and such box or crate must indicate thereon, or on label or band attached thereto, the number of baskets therein contained; also the minimum contents of each basket, in accordance with standards fixed.

SMOKED MEATS.

The packers of smoked meats have for many years arbitrarily included in the weight of their product the weight of the wrappings, and sold the wrappings with and at the same price as the smoked meat. This constitutes a sale at gross weights, which is a violation of the letter and spirit of the weights and measures law. The powerful influence of the packers has temporarily defeated the purpose of the law in this respect under the pretense that the law of sanitation demands the wrapping of smoked meats. This contention is well founded, and the packers should wrap their meats without forcing the public however to pay 32 cents per pound (the present price of bacon), for pulp, paper, and string, which maximum cost is approximately four cents per pound. As much as 12 ounces of paper has been found wrapped on an eight pound piece of bacon. The average weight of the wrappers is approximately six ounces, which at 32 cents per pound, amounts to twelve cents for a commodity which is useless to the public and provides an enormous profit to the packers. These regulations provide for the sale of smoked meats by net weight, and notwithstanding the arbitrary attitude and powerful influence of the packers, these regulations have been and shall continue to be rigidly enforced.

RANGE BOILERS.

The standard small sizes of range boilers are 5, 10 and 30 gallons capacity, and in selling them they are so represented. Range boilers represented to contain a thirty gallon capacity have upon inspection been found to contain only 25 gallons capacity, while they are actually marked and represented to contain 30 gallons. Such representation constitutes a violation of the Weights and Measures Act. From investigation, there appears to be approximately 8,000 range boilers sold in the state annually, of which 70 per cent were represented as 30-gallon capacity. In this size, therefore, the greatest amount of error was found. This misrepresentation was the result of severe competition. Manufacturers yielded to a demand for a cheaper price by decreasing the price of their boilers. In doing so, however, they did not change their indication of contents or capacity, which really forms the selling price of the boiler. The purchasing public naturally assumes that the indications as to contents were correct, especially so due to the activities of this department. Under this ruling, all range boilers indicating capacity must indicate the true capacity of the boiler.

OLIVE OIL.

Olive oil, when sold in tin containers, as the result of custom and general adoption, has always been marketed in quantities of the regular United States standard gallon, and its regular subdivisions. Diverting from this custom and usage results in general confusion to the consuming public, and destroys the basis of equitable competition so essentially necessary for commercial harmony. From observation, a can containing one quart can not be distinguished from a can containing $1\frac{12}{16}$ pints, and persons obtaining a trade advantage by the reduction of the standard quart in this amount may in future meet competition of cans containing $1\frac{10}{16}$ pints, etc. This department desires to act as a public institution to safeguard the people against deception in weight and measure in the sale of common commodities, and to prevent the reduction in the weight or measure of common commodities as a medium of competition where such weight or measure of common commodities is generally established as a legitimate trade custom by virtue of the authority provided in section 6 of the Weights and Measures Act. All olive oil when sold in tin containers shall be of quantities in accordance with the United States standard gallon, liquid measure, and its regular subdivisions, *i. e.,* half-gallon, quart, pint, half-pint, and gill, and no other. In order that these regulations may be enforced without any unnecessary hardship, provision has been made that they shall not be effective until July 1, 1917.

DRUGS AND PHARMACEUTICAL PREPARATIONS.

The provisions of the Net Container Act apply to foodstuff and stuffs intended to be used or prepared for use as food or medicine for human beings. Paragraph "D" of section 6 exempts from the provisions of the act the sale of medicine when prescribed by a licensed physician, veterinarian, or dentist; or to medical or pharmaceutical preparations or mixtures of two or more medicinal substances. These exemptions are made due to the fact that in patent or compound medicines, the quality or action of the medicine being considered of greater importance than the quantity. When commodities like sulphur, epsom salts, witch-hazel, tincture arnica, rose water, glycerine, are sold, offered, or exposed for sale in containers, the actual quantity must be indicated on the container.

POST OFFICE SCALES.

Weighing apparatus employed in the post offices of the state come within the jurisdiction of this department so far as the inspection, sealing and condemning are concerned. This is a first instance where the Postmaster General has extended jurisdiction for this inspection to a state department. Under this jurisdiction all of the weighing apparatus employed in post offices has been inspected the same as any other apparatus employed in the avenues of trade. Where commodities are sold at 32 cents a pound, which is the price of first-class mail matter, the greatest possibility for error is ever present, especially so if the poorer types of apparatus are employed. The standard for accuracy in the apparatus employed in post offices should be effectively maintained, and the confidence of the people should be respected by safeguarding them against inaccurate weights obtained by use of faulty apparatus. Post office weights are usually arbitrary. The public, as a rule, must either accept them or be deprived of the service. As the result of the inspection of 125 weighing devices employed in post offices in Alameda County, 48 were sealed without adjustment, 30 were sealed after being adjusted, and 48 were condemned as out of order. This inspection shows that 35 per cent of the apparatus employed in this county was correct, and 65 per cent was incorrect.

METRIC SYSTEM.

The growing trade between South America and the Orient, and foreign trade in general, makes it imperative that all weights and measures officials should thoroughly understand the metric system of weight and measure.

This system is of French origin, and is known as a decimal system.

It is at the present time either obligatory or permissive in every civilized country in the world. Its use in the United States was legalized by an act of congress in 1866, and while it is not generally adopted for use in the avenues of state and interstate trade, it is the only system adopted by science, owing to its unquestioned accuracy, and its possibility of indicating the minutest subdivisions. The Federal Government has adopted this system in its mints, and in many other departments, and has made it obligatory in Porto Rico and the Philippine Islands.

The three advantages claimed for the metric system are:

First: The decimal relations between the units.

Second: The extremely simple relations of the units of length, area, volume, and weight, to one another.

Third: The uniform and self-defining names of units.

The fundamental unit of the metric system is the METER, the unit of length. From this, the units of capacity (LITER) and of weight (GRAM) were derived. All other units are the decimal subdivisions or multiples of these. These three units are simply related, *i. e.,* for all practical purposes one CUBIC DECIMETER equals one LITER, and one LITER of water weights one KILOGRAM.

The metric tables are formed by combining the words METER, LITER, and GRAM, with the six numerical prefixes, as in the following table:

MILLI equals	$\frac{1}{1000}$	or .001	METER, for length.
CENTI equals	$\frac{1}{100}$	or .01	
DECI equals	$\frac{1}{10}$	or .1	
UNIT equals	ONE		GRAM, for weight or mass.
DEKA equals	$\frac{10}{1}$		LITER, for capacity.
HECTO equals	$\frac{100}{1}$		
KILO equals	$\frac{1000}{1}$		

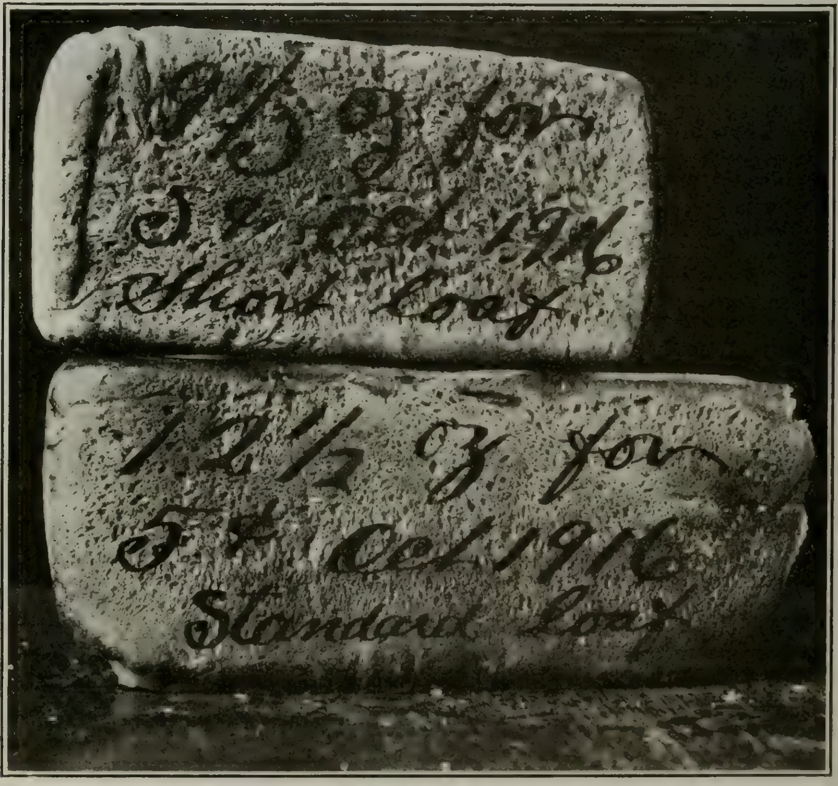
I desire to urge your serious study of this system to such an extent that its practicability can be fully demonstrated by you.

BREAD.

The original weight of bread when baked in loaves for sale in the State of California was sixteen ounces. This standard, however, chiefly as the result of unfair competition, was reduced from time to time until a nine-ounce loaf was not uncommon. The common average of weight generally maintained by bakers throughout the state in late years has been twelve ounces, and in order that this standard be maintained, several cities passed ordinances fixing twelve ounces as the minimum standard weight of bread. Acting under the authority vested in me as State Superintendent, influenced by public demand and petition of the Master Bakers of the state that a uniform standard weight of bread when baked in loaves be fixed, I provided for and fixed the standard weight of loaves of bread when baked, under date of November 8, 1916, as follows:

"All loaves of bread made or procured for the purpose of sale, sold, offered, or exposed for sale in the State of California, shall weigh when baked twelve ounces avoirdupois, and such weight shall be the standard weight of a small loaf in the State of California. Bread may also be made or procured for the purpose of sale, sold, offered, or exposed for sale in loaves of a weight of twenty-four ounces, which shall be known as the standard large loaf. Also in multiples of twelve ounces, *i. e.,* twenty-four ounces, thirty-six ounces, forty-eight ounces, sixty ounces, and seventy-two ounces avoirdupois weight, and in no other way except as hereinafter provided.

Bread when baked, and commonly known as 'twin loaves,' when made or procured for the purpose of sale, sold, offered or exposed for sale, shall be a multiple of the standard weight fixed for small and large loaves, as provided for in this opinion, and when any unit of the so-called 'twin loaf' is sold, offered, or exposed for sale, such unit shall be of a weight as herein fixed for the small or large loaf.



One and one-half Million Dollars Saved to Consumers per annum by Fixing and Enforcing a Standard Weight of Bread.

The provisions of this opinion shall not apply to the manufacture or sale of crackers, pretzels, biscuits, buns, scones, or rolls or loaves of fancy bread weighing less than one-fourth of a pound avoirdupois, or to the manufacture or sale of raisin bread containing not less than one-eighth raisins, or to any bread which is sold, offered or exposed for sale as stale bread, provided the seller shall at time of sale expressly state to the buyer that the bread so sold is stale bread, or twenty-four hours old.

A tolerance of two ounces avoirdupois weight in excess of the standard weight as herein fixed shall be allowed on any or all standard small loaves, and a tolerance of four ounces avoirdupois weight in excess of the standard weight as herein fixed shall be allowed on any or all large loaves. The tolerance fixed for large loaves shall apply to all multiples of the twelve-ounce standard fixed for small loaves, and there shall be no tolerance below the fixed standard weights.

All inspections of the weight of bread shall be made on the premises of the manufacturer, and the standard weight of bread as herein provided shall be determined by the average weight of not less than twenty loaves weighed upon the premises where such bread is manufactured.

Any person, firm, or corporation who shall make or procure for the purpose of sale, sell, offer, or expose for sale in the State of California any bread in loaves otherwise than herein provided for, and in conflict with the fixed standard weight of bread when baked, shall be guilty of a misdemeanor as provided for in section 38 of chapter 597 of the amended statutes of 1915.''

Under date of December 13th, the Attorney General held that it did not lie within the power of an administrative officer to declare the violation of a regulation promulgated under the authority of the law a misdemeanor, where the legislature had not expressly so determined. He further held that while section 6 authorizes the Superintendent to fix a standard weight of bread when baked in loaves, that the exercising of such power does not prohibit the sale of bread in a manner other than in accordance with the standard fixed. This opinion from the Attorney General restrained the enforcement of the standard weight of bread until such time as the legislature should clarify and definitely define the powers of the Superintendent in this respect.

There is approximately a million loaves of bread manufactured and sold by the bakers of the state each day. By reducing the standard weight from twelve ounces to ten ounces is a reduction of two ounces per loaf, which on one million loaves amounts to a reduction in quantity of two million ounces, which at twelve ounces to a loaf is equivalent to 166,666 loaves. At the selling price of 5 cents per loaf, this would amount to $8,333.30 per day. Counting 300 days to the year, this would amount to $2,499,990 per annum. These figures are a monumental argument in favor of the sincere purpose of this department in this endeavor to be a useful institution in the interests of the people.

"Net Weight." The net weight of commodities, produce, or any article offered or exposed for sale, where the quantity is established by weight, measure or count, such weight, measure or count must be the actual net weight measure or count of the commodity sold, exclusive of the weight of the container, it being the serious purpose of this department to discourage effectively the sale of any commodity, article or produce, by gross weight.

OFFICE SERVICE.

The general work of the Department has not been restricted, nor has it been confined to any particular class or body of men. It has conscientiously endeavored to hold out to every person in the state a protection and a safeguard, making it thoroughly a people's department, in which all are concerned.

Thousands of opinions relative to weights and measures have been furnished on request of the merchants throughout the state, and nearly every character of weights and measures problems has been referred for scientific or legal interpretation, all of which have had the earliest possible attention.

The public has constantly availed itself of the service and the equipment of the department in testing and calibrating every type of commercial, as well as scientific weighing and measuring devices.

NEW EQUIPMENT REQUIRED.

I beg to most earnestly recommend the installation of a complete set of standards for testing and calibrating clinical thermometers, and thermometers intended for other scientific purposes.

From investigation I find that there are comparatively few standard thermometers in the state of California which are available for the purpose of calibration, and experience has proven that a number of thermometers used for the purpose of calibration in public laboratories are incorrect, due in a large measure to the fact that this department is not equipped with these standards.

I also desire to recommend the purchase of a substantial automobile truck, together with approximately three tons of standard 50-pound test weights. The equipment of the average county sealer consists of only 500 pounds of standard test weights, which amount is inadequate in testing any weighing apparatus with a capacity in excess of 1,000 pounds. The lack of necessary equipment for testing large capacity dormant and wagon scales has always been a serious handicap to the performance of efficient work by the county sealers, and it has been only under most inconvenient expediency conditions that the sealers have been able to test this character of apparatus. This equipment, owned by the state, would be employed in each county for a fixed period of time, and it is calculated that during the year the equipment will be available in each county for the purpose of testing large capacity weighing apparatus. Under these circumstances the counties would obtain the necessary employment of this equipment at the lowest possible cost, the only expense being the wages of the deputy operating the truck. The actual work of testing would be done by the county sealer.

I plan to further extend the usefulness of this department by installing proper equipment for the testing of gas, electric and water meters. The necessary equipment for these tests is also recommended.

AMENDMENTS.

No. 1. Section 32 of the Weights and Measures Act provides in part as follows:

"——— any person who, by himself, or his employee or agent, or as the employee or agent of another, shall sell or offer or expose for sale any commodity, produce, article or thing in a less quantity than the true net weight, or true net measure thereof, or in a less quantity than he represents it to be or contain, shall be guilty of a misdemeanor."

This part of the act is ambiguous, in as much as the purpose intended is not clearly defined. It is manifestly impossible for any person to sell any commodity in a less quantity than the true net weight or the true net measure thereof. It is, however, possible for a person to sell a commodity in a less quantity than he represents it to be or contain. The first phrase is intended to provide for the sale of commodities by true net weight and is intended to be construed to prohibit the sale of commodities by gross weight. All commodities should be sold by net weight, to the entire exclusion of the sale of commodities by gross weight. The sale of commodities by gross weight offers the greatest opportunity for the perpetration of fraud and is a menace to the standard principle of "Honesty in Trade", and I most earnestly beg to recommend that this provision be so amended as to clearly define that all commodities sold, offered or exposed for sale, shall be sold by net weight.

No. 2. Section 6 provides in part as follows:

"———. The State Superintendent of Weights and Measures may establish tolerances for use in the state of California similar to the tolerances established by the National Bureau of Standards, and he may establish a standard net weight, or net measure, or net count, of any commodity, produce, or article."

This latter provision gives to the State Superintendent the power to fix a uniform standard weight, measure or count, of common commodities. These powers have been exercised during the past year by the

State Superintendent by fixing a uniform standard measure for wood, a standard weight of a barrel of flour, a standard weight for butter when sold in containers, etc. Your Superintendent has not exercised these powers arbitrarily, but has exercised them in the interests of honest trade and competition, upon the urgent request of the commercial interests of the state concerned in the particular commodity standardized.

Your Superintendent has not performed, or under any circumstances intentionally exceeded his authority, or in any manner endeavored to interpret these powers as being an investiture in him of the powers of legislation in any manner conflicting with the powers of the legislature.

The exercise of the powers extended, to fix a standard net weight, net measure, or net count of a standard of a common commodity is considered a fulfillment of the intent and purposes of this provision, and the act of the Superintendent being performed in accordance therewith, is naturally sustained by such provision, and I have held that a violation of any act performed by the Superintendent in the fulfillment of this provision is punishable by the penalty provided for under section 38, which reads: "Any person violating any of the provisions of this act shall be guilty of a misdemeanor." Your Superintendent has held that a violation of any regulations issued by him, based upon the authority prescribed under section 6, is a violation of the law itself.

With reference to the power to fix tolerances, if the power of the Superintendent was invalid in this respect, it would be impossible to make accurate inspection of weighing and measuring devices, and it would not be possible to establish a uniform system of weights and measures.

The Attorney General has opinioned in conflict with the opinions of your Superintendent as set forth, and I beg to recommend that this section be so amended as to clearly define the powers of the Superintendent relative to the fixing of uniform standards of weight, measure or count.

No. 3. Section 16 creates the office of sealer of weights and measures, and makes it the mandatory duty of the boards of supervisors of each of the counties of the state to appoint a sealer of weights and measures for their respective counties, fixing his compensation at five dollars per day when actually employed, together with traveling expenses incurred in the performance of his duties. It also provides that in case the legislative body of any county, or city and county, shall not appoint a sealer for such county, or city and county, within twenty days after written request of such county by the Superintendent is received, the State Superintendent shall prescribe, as soon as practical, a deputy superintendent, who shall perform all the duties of sealer in such county, or city and county, as provided in this act to be performed by county or city sealers.

In the interest of practical economy and efficiency, and in order that the service of this department may be rendered in the most effective and efficient manner by persons who seriously make this work their profession, I beg to recommend that the section be so amended as to limit the powers of appointing the county sealer, to counties with populations in excess of 20,000 inhabitants. In the less populated counties the work of the sealer has been incidental to his regular vocation, and it follows that a person employed by the county for three months during a year, can not render the same efficient service as he could were he employed during the entire year.

In many instances persons have been selected, mentally and physically unfit for the peculiar duties incumbent on a weights and measures official, thereby seriously incumbering and retarding the usefulness of the law in the interests of the people.

I beg to recommend that the duties of sealer in counties of a population less than 20,000, or counties of the 26th to 58th class, be performed by a deputy superintendent assigned to such duties by the State Superintendent.

My recommendations provide for continual employment of state deputies, and where the work under present circumstances is being done by four or five county sealers at intervals, this work could be done more effectively, more efficiently, and with a substantial saving to the county, by being performed by one competent deputy superintendent.

IN CONCLUSION

I beg to say that I have seriously endeavored to make this department truly a Public Service Department, and have earnestly endeavored to extend its influence in the closest manner possible to the people, thereby affording them every opportunity to protect themselves against weights and measures frauds, erroneous trade customs and illegitimate and unfair competition, thoroughly exemplifying the moral that "Honesty in Trade Should be a Principle and Not Merely a Policy." The weighing and measuring devices employed in the avenues of trade in the state of California today are of satisfactory types, substantially constructed, and due to our system of inspection and the enforcement of the prescribed tolerances and specifications, errors and faults have been reduced to a minimum.

Respectfully submitted.

CHAS. G. JOHNSON,
State Superintendent of Weights and Measures.

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SECOND BIENNIAL REPORT

OF THE

Industrial Welfare Commission

OF THE

State of California

1915-1916

California State Printing Office
SACRAMENTO.
1917

MEMBERS OF INDUSTRIAL WELFARE COMMISSION

FRANK J. MURASKY, Chairman
A. BONNHEIM
WALTER G. MATHEWSON
A. B. C. DOHRMANN
KATHERINE PHILIPS EDSON
Executive Officer

IN MEMORIAM

A. BONNHEIM

Born November 2, 1855

Died December 23, 1916

LETTER OF TRANSMITTAL.

Office of the Industrial Welfare Commission,
San Francisco, February 1, 1917.

Sir:

In compliance with Chapter 324, Statutes of 1913, we have the honor to transmit herewith the second biennial report of the Industrial Welfare Commission.

Respectfully,

INDUSTRIAL WELFARE COMMISSION,
Frank J. Murasky,
Chairman.

To His Excellency, Hiram W. Johnson,
Governor of the State of California.

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INTRODUCTION.

In presenting this report of work accomplished and projected, the commission feels that with the limited means at its disposal it has accomplished the greatest good for the greatest number of women by concentrating its efforts on the problem of securing a minimum wage and fixing the maximum hours of work for women workers in the canning industry. The canning industry, employing 20,000 women, was heretofore exempt from all regulative legislation, and the hours of labor were excessive in many cases.

During the biennial period just passed the Industrial Welfare Commission has endeavored to pursue a constructive policy. It has followed a definite program of cooperation with the industries under consideration, through conferences of representative committees, consisting of both employers and workers, and visits from the commissioners or agents of the commission to the establishments for mutual understanding and help. It would not be fitting to fail to mention in this report what is perhaps the most important development of the work up to the present time, namely, the courtesy and cooperation shown this commission by the employers of California. The agents of the commission have been received courteously and given every opportunity to gain the fullest information. Since the issuance of the orders affecting canneries, we believe the canning industry generally has been remarkably sincere in trying to live up to the spirit as well as the letter of the law. For this cooperation and support the commission is profoundly grateful, as we believe that through the development of this spirit of mutual understanding will come knowledge of how labor, capital and the state may solve the present and future industrial problems.

The commission appreciates full well the pioneer character of minimum wage legislation in the United States, and has proceeded with great caution in its work. It has been most solicitous in keeping in close touch with industry for mutual education and understanding of the problem. Although California does not yet rank as an industrial state, its industries are growing and it is fast becoming the industrial center west of the Rocky Mountains. In a sense this is an ideal laboratory for industrial experiments. With a citizenship committed to a program of social and industrial justice, with constitutional amendments carried by overwhelming majorities, authorizing the legislature to proceed with a broad and modern industrial policy, California, by its direct vote, has put its seal of approval on such legislation.* Being the largest state in the west that is attempting by legislative action to regulate industry, particularly in providing for a living wage for women workers, it is imperative that any action taken here must not only stand the test of local experience, but be indicative of what may be accomplished in more complex industrial communities. It is also imperative that such action be taken only after a foundation of fact has been established. these facts having been ascertained by the most careful and scientific investigations. Any less care would be an injustice to the employers of the state, would curtail expansion of business, and would defeat the very purpose of such legislation, *i. e.*, to provide the women workers of the state with *work* at a living wage and with comfortable and decent working surroundings.

SUMMARY.

The commission has been seriously handicapped in the efficient conduct of its affairs by the limited appropriation of $15,000 per annum, which was sufficient for investigatory purposes, but insufficient to provide for enough agents to properly enforce its orders and to keep up the other details of its numerous investigations. For this reason all investigations ceased with the opening of the canning season in 1916.

Preliminary investigations of the canning industry were made by the agents of the commission throughout the season of 1915, and in October of that year Miss Marie L. Obenauer, formerly chief of the Women's Division of the United States Bureau of Labor Statistics, was employed to make a study of the data accumulated by the commission in this industry. Miss Obenauer is the most expert investigator of the canning industry in this country, having made studies for the United States government of conditions in this industry in California in 1911, in Maryland and in the pea canneries in Wisconsin. Miss Obenauer's study appears with the report in the canning industry.

The fall of 1915 and the winter of 1915 and 1916 were occupied in arranging for the Wage Board in the canning industry. During this time Commissioner Edson made a careful study of the material collected by the commission on the cost of living of self-dependent women. Her report appears on page 19.

During January and February, 1916, the commission was occupied with the Wage Board and Public Hearing in the canning industry. On February 14, 1916, the commission issued Orders Nos. 1 and 2, fixing the minimum time and piece rates in the canning industry, the maximum hours of work, and the minimum standards for the sanitary conditions of workrooms and toilets in canneries. These orders became operative on April 14, 1916.

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*It is important to call attention to the fact that the California Federation of Women's Clubs did much to aid in the carrying of the minimum wage constitutional amendment and to create an intelligent understanding of the work of this commission.

With the beginning of the canning season in 1916, the entire force of the commission was directed to the proper understanding, cooperation and enforcement of its orders. Much was accomplished to avoid friction and misunderstanding by frequent conferences with committees and individual canners. Commissioner Edson personally visited forty-eight canneries during the season of 1916.

The agents in charge of the cannery investigations were: Miss Helen V. Bary, who had charge of the investigations in the southern California canning districts and of the San Joaquin Valley; Mrs. Grace Simon and Mrs. Belle Hayes Cooley, who investigated the canneries in San Francisco, and made the first visits to the Santa Clara and Sacramento valleys. Miss Bary also made a supplementary investigation of the Santa Clara and Sacramento valley canneries.

It was found during the investigations of the canning industry that in most canneries an effort was being made to seat the women in a crude way, but the methods of work and type of tables now in use make it practically impossible for the women to sit while at work. In August, 1916, the commission in cooperation with the Industrial Accident Commission engaged Mr. Harold Mestre, an industrial engineer, formerly with the Workmen's Compensation Service Bureau, to make a study of existing methods of work and seating and to report suggestions for the proper seating of women in this long-hour industry. Mr. Mestre's report is included with the cannery report.

During the early part of 1915, Commissioner Edson visited the Industrial Welfare Commissions of Oregon and Washington, also the Minimum Wage Commission of Massachusetts, members of the Factory Investigating Commission of New York, and the Industrial Commission of Wisconsin. The experiences of these and other similar bodies were noted. An investigation of methods for teaching apprentices and learners was made, especially those of the Manhattan Trade School of New York and the continuation schools of Cincinnati and Milwaukee. This study convinced the Industrial Welfare Commission of the necessity for more control over the learners in industry, and during the legislative session of 1915 an amendment to the act creating the commission was secured, as follows:

> "SEC. 8. (*b*) For any occupation in which a minimum wage has been established, the commission may issue to an apprentice or learner, a special license authorizing the employment of such apprentice or learner, for such time and under such conditions as

> the commission may determine at a wage less than such legal minimum wage; and the commission shall fix a special wage for such apprentice or learner.
>
> (*c*) The commission may fix the maximum number of women, and minors under eighteen years of age, to be employed under the licenses provided for in subdivisions (*a*) and (*b*) of this section in any occupation, trade, industry or establishment in which a minimum wage has been established."

In August, 1915, Professor Meyer Bloomfield was retained by the commission to assist in its study of apprenticeship. During this time Professor Bloomfield addressed different employing groups and central labor councils, both in San Francisco and Los Angeles, in reference to studying the problem of employment, the selection and promotion of employees, and also outlined plans for Employment Managers' Associations. Such an association, with Mr. Fred W. Dohrmann as president, was formed in San Francisco as an outgrowth of Professor Bloomfield's work. Professor Bloomfield also submitted to the commission an outline for a policy concerning "learners" in industry, which appears on page 69 of this report.

In September, 1915, Miss Bertha von der Nienburg, formerly special agent of the United States Bureau of Labor Statistics and, as such, in charge of the "investigation of the effect of minimum wage legislation in the mercantile industry of Portland," was employed to make a careful study of the garment industries of this state.

An investigation of the laundry industry of the state was made by Miss Bary during 1916, her report being included herein.

In April, 1916, the commission had a conference with Mr. Samuel Leask, president of the California Retail Dry Goods Association, preliminary to the appointment of an advisory committee in that industry. Mr. Leask appointed the following gentlemen, who met with the commission on July 7, 1916:

Marshall Hale, of Hale Bros., Inc., San Francisco, chairman;
H. C. Capwell, H. C. Capwell Co., Oakland;
R. W. Costello, O'Connor, Moffatt & Co., San Francisco;
Samuel Leask, Santa Cruz;
G. M. Fontaine, Hale Bros., San Jose;
W. E. Chamberlain, A. Hamburger & Sons, Los Angeles;
W. A. Faris, Fifth Street Store, Los Angeles.

This committee was requested by the commission to make a study of the following questions, and report findings to the commission at a later date:

The cost of living.
The minimum wage.

The graduation and control of the apprenticeship period in the retail mercantile industry.

Should any difference be made between the cities and the country in the minimum wages fixed?

The best method of securing a Wage Board.

In December, 1916, the commission received aid from Governor Johnson, the State Board of Control and the Controller, from the emergency fund, which will permit the fixing of minimum wages in the retail mercantile and laundry industries before the next biennial appropriation is available.

Since the last report was made the only change in the personnel of the commission was brought about through the death of Mr. A. Bonnheim on December 23, 1916. The vacancy thus created has not yet been filled, the commission at this time consisting of but four members.

On February 29, 1916, Mr. H. A. Scheel tendered his resignation from the office of executive secretary in order to resume his work as statistician of the Bureau of Labor Statistics, from which he had a leave of absence to assist in the organization of the Industrial Welfare Commission. At this time Katherine Philips Edson was appointed executive officer of the commission, and has served in that capacity since the acceptance of Mr. Scheel's resignation on March 1, 1916.

VISITORS.

During this biennial period the commission had the following distinguished visitors, who were engaged or interested in similar work:

Father Edwin V. O'Hara, chairman of the Industrial Welfare Commission of Oregon;

Miss Caroline Gleason, secretary of the Industrial Welfare Commission of Oregon;

Mr. Edwin Olson, chairman of the Industrial Welfare Commission of Washington;

Mrs. Frank W. Hallowell, Massachusetts Consumers' League;

Mrs. Florence Kelley, secretary National Consumers' League;

Mr. A. Filene, of Boston;

Mr. Percy Straus, of Macy & Co., New York;

Professor Meyer Bloomfield, of Boston;

Miss Marie L. Obenauer, formerly chief of the Women's Division of the United States Bureau of Labor Statistics;

Miss Bertha von der Nienburg, formerly special agent of the United States Bureau of Labor Statistics.

ACKNOWLEDGMENT.

The commission wishes to thank Governor Johnson for his repeated expressions of confidence and support, without which the work would have been intensely difficult and practically impossible; also the State Board of Control, which has greatly facilitated the work and given expert advice and assistance when asked.

The commission acknowledges particularly the debt of gratitude it owes Miss Obenauer, who gave most generously of her time and ability.

In closing the commission takes this opportunity to express its appreciation of the assistance rendered by the various state departments, particularly for the cooperation and help given by the Bureau of Labor Statistics, the Industrial Accident Commission, the Commission of Immigration and Housing and the Civil Service Commission.

RESUME OF A STUDY OF THE COST OF LIVING OF WOMEN WORKERS IN CALIFORNIA, MADE IN 1914.

STUDY OF THE COST OF LIVING

The instructions of the law, Statutes 1915, Chapter 571, creating the Industrial Welfare Commission, make it obligatory that the minimum wage determined by the commission "shall not be less than a wage adequate to supply to such women and minors the necessary cost of proper living and to maintain the health and welfare of such women and minors." Sec. 6 (*a*) 1.

For this purpose a survey was made during 1914 of the expenditures of women workers in California and their different modes of living. At one of the first meetings of the commission it was determined that the standard woman for the investigation should be the self-dependent woman; the one who received no help from other sources and on whom there were no dependents.

This study was published in the First Biennial Report of the commission, which edition is entirely exhausted.

For the convenience of future wage boards this report is herewith reprinted, with other information which the commission believes to be of value in this basic question.

Reprint from First Biennial Report.

The investigations into the cost of living proved very difficult. As previously stated, our attempts to obtain estimates from both employers and employees were unsuccessful. The investigation was finally confined to determining as near as possible the actual expenditures of self-supporting women employed in the various industries. Over 1,000 women adrift were visited in the evenings by investigators. Budgets were prepared covering actual expenditures by the employees during one whole year. These schedules were carefully examined and only those of women who were actually self-supporting, and not receiving outside assistance, were included in the tabulations.

In these tabulations schedules have been classified into two general occupation groups, namely: (1) factory and workroom hands, which includes women in laundries; (2) sales, clerical and office employees. The expenditures are shown by wage groups in order to compare expenditures with wages received. The average weekly expenditures are given under three general headings: (1) clothing, total taken from each enumeration of the various articles of clothing used; (2) board, lunches and lodgings; (3) all other expenses, including laundry, repair of clothing, street car fare, medicine and dentistry, insurance, association dues, church and other contributions, newspapers and magazines, vacation expenses and incidentals. (Table 73.) These tabulations must not be taken as conclusive or as showing the cost of proper living. The principal object was to ascertain under what conditions self-supporting women live and their expenditures. The figures are valuable in that they show in a fair way the amount that a woman, who is confronted with the problem of depending entirely on her own resources, is obliged to spend exclusive of emergencies. Some schedules were not included, as they showed large expenditures for operations or dental work which had been paid out of previous savings. Separate tables representing San Francisco and Los Angeles. (Tables 71 and 72.)

Lodgings occupied by the women scheduled and cost of same are submitted. (Tables 74 and 75.) In addition we have presented tables showing places investigated by the agents of the commission in response to advertisements for board and lodgings. These investigations were made in the cities of San Francisco, Los Angeles, Oakland, Sacramento and San Diego. (Tables 76–80.)

TABLE 71. SAN FRANCISCO.

Average Weekly Expenditures of Self-supporting Women taken from annual budgets obtained by personal investigations.

Occupation and wage group	Number of schedules considered	Average weekly expenditures			
		Total	Clothing	Board, lunches and lodgings	All other expenses
Factory and workroom hands—					
Under $6.00	2	$6 16	$1 18	$4 34	$0 64
$6.00 to $7.99	9	6 27	1 23	4 45	59
$8.00 to $9.99	20	7 67	1 58	4 73	1 36
$10.00 to $11.99	33	9 31	1 85	5 62	1 84
Totals—all under $12.00	64	$8 27	$1 66	$5 14	$1 47
$12.00 and over	48	9 87	1 85	5 97	2 05
Sales, clerical and office—					
Under $6.00	5	$6 35	$1 37	$3 91	$1 07
$6.00 to $7.99	11	7 29	1 55	4 63	1 11
$8.00 to $9.99	40	8 66	1 68	5 41	1 57
$10.00 to $11.99	31	11 05	2 36	6 30	2 39
Totals—all under $12.00	87	$9 21	$1 89	$5 54	$1 78
$12.00 and over	11	11 53	2 08	6 66	2 79

TABLE 72. LOS ANGELES.

Average Weekly Expenditures of Self-supporting Women taken from annual budgets obtained by personal investigations.

Occupation and wage group	Number of schedules considered	Average weekly expenditures			
		Total	Clothing	Board, lunches and lodgings	All other expenses
Factory and workroom hands—					
Under $6.00	10	$5 95	$1 02	$4 21	$0 72
$6.00 to $7.99	40	6 16	96	4 33	87
$8.00 to $9.99	69	7 66	1 39	4 92	1 35
$10.00 to $11.99	27	8 34	1 49	5 22	1 63
Totals—all under $12.00	146	$7 26	$1 27	$4 76	$1 23
$12.00 and over	52	9 94	1 89	5 88	2 17
Sales, clerical and office—					
$6.00 to $7.99	8	$6 61	$1 23	$4 42	$0 96
$8.00 to $9.99	33	8 62	1 60	5 49	1 53
$10.00 to $11.99	30	9 30	1 74	5 86	1 70
Totals—all under $12.00	71	$8 68	$1 61	$5 53	$1 54
$12.00 and over	23	11 22	2 68	6 44	2 10

TABLE 73.

Analysis of "All Other Expenses," showing average weekly expenditures for various items.

	San Francisco				Los Angeles			
	Factory and workroom hands		Sales, clerical and office		Factory and workroom hands		Sales, clerical and office	
	Under $12.00	$12.00 and over	Under $12.00	$12.00 and over	Under $12.00	$12.00 and over	Under $12.00	$12.00 and over
Laundry	$0 12	$0 17	$0 21	$0 31	$0 09	$0 12	$0 16	$0 24
Repair of clothing	02	04	03	14	01	04	03	09
Repair of shoes	02	02	03	02	02	02	03	03
Street car fare	32	33	34	47	18	20	14	04
Medicine and dentistry	21	41	23	29	28	67	24	34
Insurance	07	10	10	03	09	08	13	09
Association dues	02	04	03	08	03	08	04	01
Church and other contributions	05	08	08	22	08	09	12	13
Newspapers and magazines	04	05	03	13	04	08	06	08
Amusements	25	27	23	37	12	22	12	18
Vacation expenses	06	12	11	19	01	11	07	20
Incidentals	29	42	36	54	28	46	40	67
Totals	$1 47	$2 05	$1 78	$2 79	$1 23	$2 17	$1 54	$2 10

TABLE 74. SAN FRANCISCO.

Housing Conditions of Self-supporting Women Investigated.

Type of house dwelt in	Total number schedules	Lodgings occupied by					
		1 person		2 persons		3 persons	
		No. of schedules	Average monthly rent	No. of schedules	Average monthly rent	No. of schedules	Average monthly rent
Hotel	9	7	$15 64	2	$11 25	--------	--------
Apartment	21	3	17 33	15	11 26	3	$10 55
Rooming house, including housekeeping rooms	19	10	11 35	7	7 50	2	6 42
Private home (with board)	14	11	24 55	3	23 00	--------	--------
Private home (without board)	25	19	9 51	6	7 00	--------	--------
Boarding house (with board)	7	5	27 50	1	22 50	1	17 50
*Dwelling	6	4	12 25	2	11 00	--------	--------
Totals	101	59		36		6	

TABLE 75. LOS ANGELES.

Housing Conditions of Self-supporting Women Investigated.

Type of house dwelt in	Total number schedules	Lodgings occupied by					
		1 person		2 persons		3 persons	
		No. of schedules	Average monthly rent	No. of schedules	Average monthly rent	No. of schedules	Average monthly rent
Apartment	28	7	$13 28	15	$10 15	6	$7 31
Rooming house, including housekeeping rooms	89	68	10 12	20	7 49	1	5 83
Private home (with board)	2	2	22 00	--------	--------	--------	--------
Private home (without board)	14	10	10 45	4	10 25	--------	--------
Boarding house (with board)	2	--------	--------	2	19 00	--------	--------
*Dwelling	14	1	11 00	11	7 81	2	5 16
Totals	149	88		52		9	

*Entire flat or cottage occupied.

TABLE 76. SAN FRANCISCO.

List of places investigated in response to advertisements offering board and lodgings.

	Type of house	Walking distance	Room and board			Description			
			Room only	Room and 2 meals	Room and 3 meals	Exposure	Bath facilities	Laundry facilities	Cleanliness
1.	Private home	No	--------	$20 00 mo.	-------------	Outside	Yes	Yes	Fair
2.	Private home	No	--------	-------------	$32 50 mo.	Outside	Yes	Yes	Good
3.	Private home	Yes	--------	20 00 mo.	-------------	Outside	Yes	Yes	Fair
4.	Private home	No	--------	-------------	30 00 mo.	Outside	Yes	Yes	Good
5.	Private home	Yes	--------	30 00 mo.	-------------	Inside	Yes	Yes	Good
6.	Private home	No	--------	-------------	30 00 mo.	Outside	Yes	Yes	Good
7.	Private home	No	--------	-------------	25 00 mo.	Outside	Yes	Yes	Good
8.	Private home	No	--------	25 00 mo.	28 00 mo.	Outside	Yes	Yes	Fair
9.	Private home	Yes	--------	22 50 mo.	25 00 mo.	Outside	Yes	Yes	Good
10.	Private home	No	--------	20 00 mo.	22 50 mo.	Outside	Yes	Yes	Good
11.	Private home	No	--------	-------------	5 00 wk.	Outside	Yes	Yes	Good
12.	Private home	No	--------	20 00 mo.	-------------	Outside	Yes	Yes	Good
13.	Private home	No	--------	-------------	25 00 mo.	Outside	Yes	Yes	Good
14.	Private home	No	$5 mo.	-------------	20 00 mo.	Inside	Yes	Yes	Fair
15.	Private home	No	--------	22 50 mo.	25 00 mo.	Outside	Yes	Yes	Good
16.	Private home	No	--------	-------------	5 00 wk.	Outside	Yes	Yes	Good
17.	Private home	No	--------	-------------	25 00 mo.	Outside	Yes	Yes	Good
18.	Private home	No	--------	5 50 wk.	6 50 wk.	Outside	Yes	No	Poor
19.	Private home	No	--------	20 00 mo.	-------------	Outside	Yes	Yes	Fair
20.	Private home	No	--------	-------------	20 00 mo.	Outside	Yes	Yes	Good
21.	Private home	No	--------	5 00 wk.	6 00 wk.	Outside	Yes	Yes	Fair
22.	Private home	No	--------	-------------	20 00 mo.	Outside	Yes	Yes	Poor
23.	Private home	No	--------	-------------	25 00 mo.	Outside	Yes	Yes	Good
24.	Private home	No	--------	6 50 wk.	-------------	Outside	Yes	Yes	Fair
25.	Private home	Yes	--------	30 00 mo.	-------------	Outside	Yes	Yes	Good
26.	Boarding house	No	--------	22 50 mo.	-------------	Outside	Yes	Yes	Good
27.	Boarding house	No	--------	25 00 mo.	27 50 mo.	Outside	Yes	Yes	Poor
28.	Boarding house	No	--------	5 00 wk.	-------------	Outside	Yes	Yes	Fair
29.	Boarding house	Yes	--------	-------------	28 00 mo.	Outside	Yes	Yes	Good
30.	Boarding house	No	--------	-------------	30 00 mo.	Outside	Yes	No	Fair
31.	Boarding house	No	--------	5 00 wk.	6 00 wk.	Outside	Yes	Yes	Fair
32.	Boarding house	No	--------	6 00 wk.	-------------	Outside	Yes	Yes	Good
33.	Boarding house	No	--------	-------------	7 00 wk.	Outside	Yes	Yes	Good
34.	Boarding house	No	--------	6 50 wk.	7 00 wk.	Outside	Yes	Yes	Fair
35.	Boarding house	Yes	--------	25 00 mo.	-------------	Outside	Yes	Yes	Good
36.	Boarding house	No	--------	-------------	25 00 mo.	Outside	Yes	Yes	Fair
37.	Boarding house	No	--------	-------------	22 50 mo.	Inside	Yes	Yes	Good
38.	Boarding house	No	--------	-------------	30 00 mo.	Outside	Yes	Yes	Good
39.	Boarding house	No	--------	-------------	30 00 mo.	Outside	Yes	Yes	Good
40.	Boarding house	No	--------	-------------	7 00 wk.	Outside	Yes	Yes	Poor
41.	Rooming house	No	10 mo.	-------------	-------------	Outside	Yes	Yes	Fair
42.	Rooming house	Yes	10 mo.	-------------	-------------	Inside	Yes	Yes	Good
43.	Rooming house	No	15 mo.	-------------	-------------	Outside	Yes	Yes	Fair
44.	Rooming house	Yes	6 mo.	-------------	-------------	Outside	Yes	Yes	Fair
45.	Hotel	Yes	--------	26 00 mo.	28 50 mo.	Outside	Yes	Yes	Fair
46.	Hotel	Yes	--------	-------------	30 00 mo.	Outside	Yes	Yes	Good

TABLE 77. LOS ANGELES.

List of places investigated in response to advertisements offering board and lodgings.

Type of house	Walking distance	Room and board			Description			
		Room only	Room and 2 meals	Room and 3 meals	Exposure	Bath facilities	Laundry facilities	Cleanliness
1. Private home	Yes	$2 50 wk.			Outside	Yes	No	Good
2. Private home	Yes		$25 00 mo.	$27 50 mo.	Outside	Yes	Yes	Good
3. Private home	Yes	3 00 wk.			Outside	Yes	Yes	Good
4. Private home	Yes		6 00 wk.		Outside	Yes	No	Good
5. Private home	Yes		5 00 wk.		Outside	Yes	Yes	Good
6. Private home	Yes		5 00 wk.		Outside	Yes	Yes	Fair
7. Boarding house	Yes		25 00 mo.		Outside	Yes	No	Good
8. Boarding house	Yes			4 50 wk.	Outside	Yes	Yes	Poor
9. Boarding house	Yes			6 00 wk.	Outside	Yes	No	Poor
10. Boarding house	Yes		7 00 wk.		Outside	Yes	Yes	Good
11. Boarding house	Yes		9 00 wk.		Outside	Yes	Yes	Good
12. Boarding house	Yes		6 00 wk.		Outside	Yes	Yes	Poor
13. Boarding house	Yes	3 00 wk.	6 50 wk.	8 50 wk.	Outside	Yes	Yes	Good
14. Boarding house	Yes		27 50 mo.		Outside	Yes	Yes	Good
15. Boarding house	Yes		30 00 mo.		Outside	Yes	Yes	Good
16. Boarding house	Yes		27 50 mo.		Outside	Yes	No	Good
17. Boarding house	Yes	7 50 mo.	22 50 mo.		Outside	Yes	Yes	Good
18. Boarding house	Yes		31 00 mo.		Outside	Yes	No	Good
19. Rooming house	Yes	2 00 wk.			Outside	Yes	Yes	Poor
20. Rooming house	Yes	18 00 mo.			Outside	Yes	Yes	Poor
21. Rooming house	Yes	12 00 mo.			Outside	Yes	Yes	Good
22. Rooming house	Yes	15 00 mo.			Outside	Yes	Yes	Good
23. Hotel	Yes		33 50 mo.		Outside	Yes	No	Good
24. Hotel	Yes		33 50 mo.		Outside	Yes	No	Good
25. Hotel	Yes		30 00 mo.	35 00 mo.	Outside	Yes	No	Fair
26. Hotel	Yes			30 00 mo.	Outside	Yes	No	Poor

TABLE 78. OAKLAND.

List of places investigated in response to advertisements offering board and lodgings.

Type of house	Walking distance	Room and board			Description			
		Room only	Room and 2 meals	Room and 3 meals	Exposure	Bath facilities	Laundry facilities	Cleanliness
1. Private home	No			$25 00 mo.	Outside	Yes	Yes	Fair
2. Private home	Yes			30 00 mo.	Outside	Yes	No	Good
3. Private home	Yes			5 00 wk.	Outside	Yes	Yes	Fair
4. Private home	Yes		$28 00 mo.		Outside	Yes	Yes	Good
5. Private home	No			5 50 wk.	Outside	Yes	Yes	Fair
6. Private home	No			28 50 mo.	Outside	Yes	Yes	Fair
7. Private home	Yes			30 00 mo.	Outside	Yes	Yes	Good
8. Private home	No			10 00 wk.	Outside	Yes	Yes	Fair
9. Private home	No			25 00 mo.	Outside	Yes	Yes	Fair
10. Private home	Yes			25 00 mo.	Outside	Yes	Yes	Fair
11. Private home	No		20 00 mo.	22 50 mo.	Outside	Yes	Yes	Fair
12. Private home	No			30 00 mo.	Outside	Yes	Yes	Good
13. Boarding house	Yes		30 00 mo.		Outside	Yes	No	Fair
14. Boarding house	Yes			30 00 mo.	Outside	Yes	No	Fair
15. Boarding house	Yes			30 00 mo.	Outside	Yes	No	Good
16. Boarding house	Yes			30 00 mo.	Outside	Yes	No	Fair
17. Boarding house	Yes			30 00 mo.	Outside	Yes	No	Good
18. Boarding house	Yes			30 00 mo.	Outside	Yes	No	Fair
19. Boarding house	Yes			30 00 mo.	Outside	Yes	Yes	Good
20. Boarding house	Yes		30 00 mo.		Outside	Yes	No	Good
21. Boarding house	Yes			30 00 mo.	Outside	Yes	No	Good
22. Boarding house	Yes			25 00 mo.	Outside	Yes	No	Fair
23. Boarding house	Yes		30 00 mo.		Outside	Yes	No	Good
24. Boarding house	Yes			30 00 mo.	Outside	Yes	No	Good
25. Hotel	Yes			30 00 mo.	Outside	Yes	No	Good
26. Hotel	Yes			32 50 mo.	Outside	Yes	No	Good

TABLE 79. SACRAMENTO.

List of places investigated in response to advertisements offering board and lodgings.

Type of house	Walking distance	Room and board			Description			
		Room only	Room and 2 meals	Room and 3 meals	Exposure	Bath facilities	Laundry facilities	Cleanliness
1. Private home	Yes	$4 00 mo.		$20 00 mo.	Outside	Yes	Yes	Good
2. Private home	Yes		$15 00 mo.		Outside	Yes	Yes	Good
3. Private home	Yes	10 00 mo.	25 00 mo.		Outside	Yes	Yes	Good
4. Private home	Yes	4 50 mo.	5 60 wk.	5 60 wk.	Outside	Yes	Yes	Poor
5. Private home	Yes	4 00 mo.	23 00 mo.	23 00 mo.	Outside	Yes	Yes	Fair
6. Private home	Yes	1 25 wk.			Outside	Yes	Yes	Fair
7. Private home	Yes	4 00 mo.	20 00 mo.	20 00 mo.	Outside	Yes	Yes	Fair
8. Private home	Yes	10 50 mo.			Outside	Yes	Yes	Fair
9. Private home	Yes	4 00 mo.	16 00 mo.	16 00 mo.	Outside	Yes	Yes	Fair
10. Private home	Yes			20 00 mo.	Outside	Yes	Yes	Fair
11. Private home	Yes	4 50 mo.		22 50 mo.	Outside	Yes	Yes	Good
12. Private home	Yes	5 00 mo.	22 00 mo.	25 00 mo.	Outside	Yes	Yes	Good
13. Boarding house	Yes	10 50 mo.	22 50 mo.	22 50 mo.	Outside	Yes	Yes	Good
14. Boarding house	Yes	5 00 mo.	25 00 mo.	25 00 mo.	Outside	Yes	Yes	Poor
15. Boarding house	Yes	6 00 mo.	28 00 mo.	28 00 mo.	Outside	Yes	No	Good
16. Boarding house	Yes	2 50 wk.	6 00 wk.	7 50 wk.	Outside	Yes	No	Fair
17. Boarding house	Yes	3 00 wk.		10 35 wk.	Outside	Yes	No	Good
18. Boarding house	Yes	10 00 mo.	7 50 wk.	7 50 wk.	Outside	Yes	No	Good
19. Boarding house	Yes	10 00 mo.	5 00 wk.	7 00 wk.	Outside	Yes	No	Good
20. Boarding house	Yes		25 00 mo.	28 00 mo.	Outside	Yes	Yes	Fair

TABLE 80. SAN DIEGO.

List of places investigated in response to advertisements offering board and lodgings.

Type of house	Walking distance	Room and board			Description			
		Room only	Room and 2 meals	Room and 3 meals	Exposure	Bath facilities	Laundry facilities	Cleanliness
1. Private home	Yes	$2 00 wk.			Outside	Yes	No	Good
2. Private home	Yes	6 00 mo.			Outside	Yes	Yes	Good
3. Private home	No		$27 00 mo.		Outside	Yes	No	Good
4. Private home	Yes			$23 00 mo.	Outside	Yes	No	Fair
5. Private home	Yes	10 00 mo.			Outside	Yes	No	Good
6. Private home	Yes	16 00 mo.			Outside	Yes	Yes	Poor
7. Private home	Yes	2 50 wk.			Outside	Yes	No	Good
8. Boarding house	No		25 00 mo.	27 50 mo.	Outside	Yes	No	Good
9. Boarding house	Yes	1 50 wk.		6 75 wk.	Outside	Yes	No	Poor
10. Boarding house	No			35 00 mo.	Outside	Yes	No	Good
11. Rooming house	Yes	18 00 mo.			Outside	Yes	No	Good
12. Rooming house	Yes	3 00 wk.			Outside	Yes	No	Good
13. Rooming house	Yes	3 00 wk.			Outside	Yes	Yes	Good
14. Rooming house	Yes	2 00 wk.			Outside	No	No	Poor
15. Hotel	Yes	2 50 wk.			Outside	Yes	No	Good
16. Hotel	Yes	2 50 wk.			Outside	No	No	Fair
17. Hotel	Yes	2 00 wk.			Outside	No	No	Poor

LIVING CONDITIONS OF WORKING WOMEN IN LOS ANGELES.

The commission's agents who were sent out to aid the women in estimating their yearly expenditures were also asked to report on living conditions as they found them, the attitude of the women interviewed as to their work and the general problem.

The Los Angeles agent in answer to newspaper advertisements gained much interesting information on the women's ways of living. Her report follows:

SALESWOMEN.

Women visited who were employed as saleswomen in department, drug and millinery stores:

1. Total number visited	308	
2. Persons not at home	121	or 39.2 per cent
3. Moved, address unknown	76	or 24.6 per cent
4. Wrong address	18	or 5.8 per cent
5. Not self-supporting	3	or .9 per cent
6. Living with husband	1	
7. Living with relatives	2	
8. Married since making schedule	4	or 1.3 per cent
9. In California less than one year	5	or 1.6 per cent
10. Number of budgets filled	74	or 24 per cent
11. Refused to fill budgets	7	or 2.2 per cent

This does not mean that only 308 visits were made; many of these women were visited several times before budgets were filled and many women were not seen even after many visits. While visiting in the apartment and lodging house section, I have made as many as twenty visits in an evening and found but four women at home.

The work of the commission and the minimum wage were entirely unknown to the women and this meant that the work had to be explained definitely to each one. Not many of the women gave the information gladly or willingly even after a lengthy explanation had been given.

Of the 76 women who had moved since making out the schedules, it was definitely ascertained that 24 had left the city. Of this number four earned more than ten dollars a week, six earned ten and fourteen earned less than ten dollars a week.

The great majority of the women (I believe I only met three or four in this group who were native daughters) were from the middle west. A few had come for their health, but the majority had come because they had heard of the wonderful opportunities of the country and wanted to take advantage of them. A few had come in a spirit of adventure. They wanted to see the country they had heard so much about, and gladly "roughed" it for a time, knowing that when they tired of it they had a home and relatives to whom they could go. All the women, even those who were bitterly disappointed with industrial conditions, were very grateful for the opportunity to earn the small amount which they received. Most of the women had a supply of clothing on hand when they came here, which lasted and would last them, with careful management, for some time to come. All who had left parents or relatives in the East expected to return to them.

Reasons Given by Women for Manner of Living.

The women for the most part preferred living in apartment or lodging houses, where two or more could live together, rather than in a private family or in an institution, as they were freer and more independent. The girls whom I met living in private families, generally had to pay carfare, as these homes were not within walking distance of the business section of the city, but board and lodging cost less than in apartment houses; also they seemed to have a wholesome home life. The homes, without exception, were attractively furnished and in a good residential part of the city. Generally the girl was the only boarder, and was looked upon as a member of the family. Girls living in apartment houses, who had previously lived in private families, said they chose the former because they could come and go as they liked, without any explanation. Living in a private family where meals were served at a definite time necessitated being on time, which was not always convenient. Living in an apartment or lodging house they could have their meals whenever they wanted them.

Again, living in a private family one had to pay carfare. If they had an evening engagement or wanted to go to the theater, it meant extra carfare. This expense was eliminated by living down town, as most of the lodging and apartment houses patronized were within walking distance of the big stores. Also the apartment houses had telephones and in many continuous hot water, which enabled the women to do their laundry whenever they felt like it or had the time.

I visited a large, comfortable and homelike cooperative home (Homer Toberman Home) for women, one that accommodates some twenty or twenty-two women at a very moderate price, and the home did not have one resident.

The Volunteers of America have a splendid, large house, with attractive grounds, tennis courts, etc., and this house is rarely filled, although the girls can live cheaper here than in apartment houses. This house is not within walking distance of the big stores. The Clark Memorial Home for girls, belonging to the Y. W. C. A., with all its attractions, is said not to hold its residents for any length of time.

The women, with few exceptions, living in apartment or lodging houses, cooked breakfast and supper in their apartment or room, and had lunch in a cafeteria. Breakfast consisted of coffee and toast, and lunch generally cost about fifteen cents. One young woman told me that she made a study of the question of how to get the greatest amount of nourishing food at the lowest cost, and she thought it was much cheaper to buy cooked food at the delicatessen shops. In buying cooked food one saved gas and had a greater variety of food.

Very few of the women visited ever sent their laundry out; they did it themselves. In some of the lodging houses, where housekeeping was not allowed, it being against the rules to wash or iron in the room, this work was frequently done, nevertheless. Two girls told me that they washed in their room at night, as they had running water in their room, and hung the clothes up to dry. They put them in their trunks in the morning, no matter what their condition, and ironed them with an electric iron the next night. One girl's ironing board was the floor and a bath towel. The other girl had some pasteboard with bath towels on the top of her trunk. I found another girl ironing on her bed.

The girl living in a private family does not have these hardships or inconveniences. The majority of women told me that they lived as cheaply as possible, doing without certain food which they liked, but which they deemed was expensive, and were living on the cheapest kind of food and the smallest amount possible. With the saleswomen it seemed more important that they dress than that they eat.

Very few of the women, with the exception of the Catholics, on whom attendance at church is compulsory, ever go to church. They say that they always went at home, but have not the time to attend here. Many of the women did their laundering Sunday morning and went to a moving picture show in the afternoon or evening.

The moving picture show was the most popular, almost universal place of amusement, the reason being that it cost only ten cents, and they could not afford any higher priced amusement.

Many of the women complained that they were in dire need of dental attention which they could not afford. The University of California has a dental clinic, but patients must pay for the material used. The women said that they could not afford even this expense, or take the time off, as they were docked for all such time.

Only the middle-aged woman had a thought for the future. She worried because she could not save for the time when she would be unable to work, and lived in constant dread of being ill or laid off.

I found just two women who were in any way trying to better their condition or increase their earning capacity. One was a bundle girl of sixteen who was attending the public school at night and taking a commercial course. The other was a young woman employed as a clerk in the office of one of the large stores, who was taking a stenographic course in one of the private night schools.

Very few of the women visited knew where the public library was or ever made use of it.

Eight Hour Law for Saleswomen.

All of the women were unanimous in their praise and approval of the eight hour law. Many of them, when asked if they intended to return to their native states, said they would be glad to go if the state had an eight hour law and if they had the money for the trip.

WOMEN EMPLOYED IN LAUNDRIES.

Visited	343	
1. Not at home	62	
2. Moved, address unknown	98	or 28 per cent
3. Wrong address	47	
4. Business address given	2	
5. Not entirely self-supporting (living with husband), (living with relatives)	39	
6. Married since making out schedule	3	
7. Women in hospital	1	
8. Suicide	1	
9. Refused to make budget	7	
10. Budgets filled	83	or 24 per cent

Again I wish to state that many of the women who were not at home at the time of the first visit were called upon more than once, unless they lived at a considerable distance.

Of the 83 budgets filled out 49 or 59 per cent were filled by married women. These women were either widowed or were divorced or deserted by their husbands.

Of the 98 women who had moved since making out the schedule, nine had left the city. One of the women earned $12.00 a week, two earned $10.00, five earned $7.00 and one $5.00. Of the 89 who had moved and left no address—

3 earned	$12 00 a week
1 earned	11 00 a week
10 earned	10 00 a week
8 earned	9 00 a week
11 earned	8 00 a week
33 earned	7 00 a week
12 earned	6 00 a week
11 earned	5 00 a week

The women for the most part lived near the laundries, or tried to live within walking distance. Houses near the laundries are old and have not the conveniences of the newer ones. The standard of living of the women depended on their education and intelligence and on the amount of their wages. A few of the younger women lived in private families and their homes were comfortable and attractive. Here again the worker had to pay carfare, but she seemed infinitely better off than the girls in the rooming house. With this group of workers the main issue was not "How are we to dress," as with the workers in the large stores, but "How are we to pay rent and buy food?"

Fatigue From Piecework.

The majority of the women appeared physically tired out at night, and said that they were rushed to death at work. They denounced the piecework system, which was accountable for this rushing. Some of the women said they did not have time to get a drink of water or go to the toilet during working hours. I have called on many laundry workers as early as 7:00 and 7:30 p.m., and found them in bed.

In this group of workers the only amusement or recreation was the moving picture show and this time it was the five-cent show. Many of the women said they could not afford the time or the money to attend even a five-cent picture show. Attendance at church was not thought of. Sunday morning was the only time they had to rest, and Sunday afternoon their laundry work and housecleaning had to be attended to.

All the laundry workers cooked their breakfasts and suppers at home, and with one or two exceptions took a cold lunch to work. They all said they could rarely afford meat, but they generally tried to have it on Sunday. Many of them said that by the time they got home after work they were so tired they did not want to cook or eat supper.

I met one young laundry worker who had previously worked in one of the large stores. She was employed as a distributor, earning $9.00 or $10.00 a week. She said that she preferred the laundry work, as she did not have the big expense of dressing, and earned the same money.

The majority of the women said they could not save a penny, and that they simply existed. The older women all had a dread of the future.

Eight Hour Law for Laundry Women.

The workers were loud in their praises of the eight hour law and looked to the establishment of a minimum wage as their only salvation. Women earning more than $9.00, however, were fearful that the establishment of a wage would be met by a cut in the wages of those receiving more than the minimum. At first it was necessary to talk at length to each woman and explain about the commission, but after a few weeks the women gladly received the agent, and even stated that they were anxiously awaiting her. This seemed to indicate clearly that the laundry workers had discussed the matter among themselves. They said that more and better schedules would have been filled in the laundries if they had understood the work of the commission.

The younger laundry workers looked strong and healthy, but the women employed for any length of time in the laundries showed very plainly the price they paid for this sort of work.

Again, many of this group complained that they were in need of dental work but could not pay for it or take the time off to attend the clinic. Many laundry workers are off work after 3:30 Saturday afternoon, but the clinic closes at 12 on Saturdays. One or two of the women suffered from stomach trouble because of defective teeth.

The large majority of the women were from the middle west.

MANUFACTURING ESTABLISHMENTS.

The following number of women, who were engaged in manufacturing establishments, paper box, cracker, printing, drug and tobacco, were visited:

Visited	57	
Not at home	11	or 19.4 per cent
Moved, address unknown	10	or 17.5 per cent
Not self-supporting (living with husband, 3; living with relatives, 1)	4	or 7 per cent
In California less than one year	2	or 3.5 per cent
Refused to fill budget	2	or 3.5 per cent
Filled budgets	28	or 49.1 per cent

There are three large cracker and candy factories in Los Angeles—Bishop's, Kahn-Beck and the Pacific Coast.

I was able to get but two budgets from this group of workers, one from a high-class woman, who was employed as a bookkeeper at $70.00 a month; the other from a $6.00 a week woman. The former lived in a private family and was very comfortably situated. The latter lived alone in the very poorest section of the city. It can hardly be said that she lived; she just existed. The workers in these factories are mostly foreigners.

The tobacco workers, of whom I met six, were very bright and intelligent. Five of these workers lived together. They rented a large and comfortable apartment. They appeared well nourished and were happy and contented. Each of these girls had a home in the middle west to which she could return if she so desired and every one of the girls was able to save a part of her wages. These two facts eliminated worry and fear of the future, and may account for the happiness and contentment of this group.

In visiting one young factory girl, who was earning $8.00 a week, and who looked very pale and tired, I asked her if she were ill. The girl's eyes filled with tears and she said she wasn't ill but hungry. This girl cooked her breakfast and supper in her room, and took a cold lunch to work. Nearly all the factory girls did likewise, but this young woman was the only one who said she was really hungry, although many said they could not afford the kind or the amount of food that they wanted.

From the women employed in the printing trade I was able to get three budgets. Two of these women were skilled workers and were bright and intelligent. Their standard of living was higher than that of the women employed in the box and other factories. They had more attractive living quarters and seemed to get more happiness and joy out of living than the factory workers and were earning about the same wage. This may be due to the fact that they were better educated and had more inner resources to draw on, or it may be due to the fact that their work was interesting, while with the factory workers their work may have been mere drudgery. Also the woman with the superior intelligence spends her wages to better advantage. Only one of this group of factory workers was trying to improve her condition. She was a young Spanish woman who had been deserted by her American husband, and was able by working at piecework to earn $10.00 a week wrapping bread. She was attending a private night school taking a course in English and stenography.

I visited eleven workers employed in the kitchens of candy shops. Nine of these workers filled schedules. One was not at home when the visit was made and one refused. Four of the women lived in apartments, four in lodging houses and one in a private family.

The lodging houses patronized were of the poorest type and the women lived alone. In the apartment houses two lived together. These workers seemed better off financially than most of the women workers whom I visited. They received one meal at work, which was the principal meal of the day, and said if they had to buy their own food they could not afford the quality or the quantity served them at their work.

REPORT ON BOARD AND LODGING IN LOS ANGELES, 1914.

A survey of the boarding house situation of Los Angeles brings one almost immediately to the conclusion that Los Angeles people, particularly the women, do not live in boarding houses. Twenty-five houses were investigated, most of which were advertised in the morning papers, and were within 20 to 30 minutes walk of the business center of the city. In almost every home there were more men than women, although in each case the landlady said she had no objections to women and some preferred women.

In the district bounded by Main on the east, Tenth on the north, Twenty-first on the south and Trenton (800) on the west, are to be found a large per cent of the boarding and rooming houses patronized by men and women who want to walk to and from their work. These houses are very similar; they are old, formerly fashionable residences that have been let as boarding houses and are in every state of collapse and decay. Most of them are dingy and dirty, and those that are clean are so like the ghosts of a former life that they are not attractive. Most of them are typical boarding houses with feeble attempts to make them homelike by decorating with large, cheap pictures, worn lace curtains, badly worn velvet carpets and weird hangings of every description. The furniture is in keeping with the rest of the house and is old and worn. Almost invariably the houses are heavy with odors from the kitchen and from long weeks of insufficient ventilation. The dining rooms are uninviting with their long tables covered only with a soiled table-cloth and heavy, chipped dishes. Board in the district will average about $6.00 per week for room and two meals a day or $7.00 for three. In almost all of these houses there is an extra charge for heat and hot baths are limited to one or at most two a week.

In interesting contrast are the houses in Bonnie Brae, Orange and Ingraham streets, first-class uptown residence districts. Here no signs are in evidence, references are given and in some cases required; houses are clean, well furnished, well aired and have an air of refinement and comfort that makes them very homelike. Board is really no higher here than downtown, $25.00, $27.50 and $30.00 per month for room and two meals a day, heat, all the hot water you can use and within 20 to 30 minutes walk of the business center. Here as elsewhere the per cent of women is smaller than men. Several of the housekeepers were questioned regarding this difference and all agreed that the apartment house attracts business women as well as the women of the semi-leisure class. They said business was worse this year than ever before and they were of the opinion the lowering of apartment house rents was largely responsible for it.

With prices practically the same, the tone and accommodations far superior, it was a puzzle to the investigator why the downtown houses were patronized at all when the uptown houses were available. Surely it must be one of two things, either the laxity of the downtown house appeals, or the prosperity and refinement in the residence neighborhoods can not be tolerated by those living on uncertain incomes and small margins.

An inquiry was made at the Y. W. C. A. as to their method of locating girls. They send no one east of Main street nor south of Twenty-eighth. They have rooms listed, with housekeeping accommodations, for as low as $1.75 per week, but really desirable rooms are from $2.00 to $3.00 a week. At the Mission Home, 116 S. Hope street, unemployed girls can get room and board for $3.00 and $4.00 per week. This home is really for the unemployed and very low-waged girl. The Salvation Army Home, 514 S. Grand avenue, gives room and board for $3.50 to $5.00 per week. The Volunteers of America home, in Boyle Heights, gives room and board for $3.00 to $5.00 per week. All of these homes have laundry and bath facilities and all are subsidized. The Mary Clark

Home accommodates 200, is very attractive and has every modern convenience. Board is $3.50 to $7.00 per week. This home aims to be self-supporting. It was a gift to the girls who *work* for their living; no teachers, nurses, students or unemployed being received. The greater part of last winter there was a waiting list of 70.

Since Los Angeles people not living at home do not patronize boarding houses to any great extent, an effort was made to discover just how they do live. The advertisements in the three morning papers were searched for part of the answer. The following tabulation is interesting:

	Room and board	Furnished rooms	Furnished flats	Furnished apartments
The Times, Dec. 11 to 17, inclusive	206	185	167	376
The Examiner, Dec. 11 to 17, inclusive	79	261	104	306
The Tribune, Dec. 10 to 16, inclusive	123	332	83	316

This gives a total of 408 rooms and board, 778 furnished rooms, 344 furnished flats and 998 furnished apartments.

The Times probably reaches a smaller per cent of working people than any other paper in town and for the week has the smallest number of furnished rooms (usually occupied by people of small means) and the largest number of room and board and furnished apartments. The Tribune, which is the working class paper because it is one cent, has only a little more than half as many rooms and board advertisements as the Times; almost double the number of furnished rooms and with but 60 less furnished apartments advertised. Undoubtedly there are duplications in the week and further duplications in the three papers, but, allowing that, there are only 408 rooms and board as against 2000 of the other classifications. This taken in connection with the restaurant situation tells its own story.

Deputy License Commissioner Chas. A. Wallace stated that at the first of the last quarter 572, $3.00; 133, $7.00, and 225, $10.00, cafe, cafeteria, restaurant and lunch counter licenses were issued and that it would be a very fair estimate to say 75 had been issued since, bringing the total number of such licenses up to approximately 1000. This does not include 100 lunch wagons on the street. Los Angeles claims a population of 540,000 people, and with 1000 eating houses it means just one for every 540 persons in the city.

Of the eating houses the cafeteria unquestionably feeds the greatest number of people. A visit to several of the large ones brought out very interesting facts.

The Shay Cafeteria, 642 S. Hill street, feeds from 1200 to 2000 people a day; about 50 per cent are men and 50 per cent more people are served at lunch than dinner. Meal checks are from 20 cents to 30 cents each.

The Colby Cafeteria, 441 S. Hill street, serves from 2000 to 3000 meals a day. Here more people take their evening meal. Women's checks approximate 18 cents and 20 cents and men's 23 cents and 28 cents. Mr. Colby thinks men need more food than women and also they have more money.

Boos Brothers have four cafeterias in the city with a total of 1200 chairs and they feed 10,000 people a day. Checks vary in different restaurants but Mr. Horace Boos thought they would run about 23 cents to 28 cents each. He says men eat 5 to 10 cents worth more of food than women because they can afford it. The patronage of their houses is largely Los Angelans. The Princess Cafeteria on Sixth and Hill with 350 chairs serves 625 to 1000 meals a day, with checks averaging about 26 cents each. Men's checks are a few cents higher than women's. They do 50 per cent more business at noon than in the evening.

The Savoy, Fourth between Hill and Broadway, serves 1000 meals a day with checks from 22 to 23 cents each. They have about an equal number of men and women patrons and the men's checks are generally 5 cents to 10 cents higher than the women's.

The Vegetarian Cafeteria serves from 900 to 1000 people a day. They serve about 200 breakfasts, 500 lunches and 300 dinners and the checks average about 23 cents. Men eat a little more than women and much more nourishing food. A girl will have a glass of milk, a salad and occasionally a bowl of soup.

Many drug stores in town serve light lunches. The Owl was visited and the manager said it was hard to make an estimate of the light lunches such as malted milk, chocolate and egg drinks, but that in their five stores they serve on an average of 625 25-cent lunches a day from 11 a.m. to 2 p.m.

Smith Grocery Company serves 350 25-cent lunches a day and Jevne Company serves 800 25-cent lunches a day.

The Globe Dairy Lunch Company with eight lunch rooms serves 8000 people a day. They serve only hot beans and spaghetti; everything else is cold. Their patronage is mostly men and the checks are 12 cents and 14 cents each.

This survey covers only a very small per cent of the cafeterias and none of the restaurants in Los Angeles.

A further reprint of material gathered in 1914 shows the following interesting information which throws light on the question of the women's employment in the mercantile and laundry trades:

INDIVIDUAL SCHEDULES.*

San Francisco Mercantile Establishments.

Individual schedules were obtained from 2413 women employed in mercantile establishments in San Francisco. These schedules have been tabulated, showing the wages received by these women in relation to their age, marital condition, number of years working, number of years in present occupation, home condition and schooling; also showing the relation between home condition and age and marital condition, and between nativity, occupation and home condition. The same information has been tabulated for 3316 women employed in the mercantile establishments in Los Angeles.

Single women comprise 73.8 per cent of those reported; married women, 12 per cent; widows, 7.8 per cent, and divorced women 6.4 per cent. Out of the 290 married women scheduled, 185 had husbands living at home, contributing to their support, and the highest paid women were the widows. This coincides with the statements of many employers to the effect that widows and divorced women having one or more children to support, are the most desirable type of female employee; having these responsibilities, they exert more effort and produce more value for the employer than any other type of worker. (Table 12.)

TABLE 12. SAN FRANCISCO—MERCANTILE.

Record of Individual Employees—By marital condition and present wage.

Marital condition	Number considered	Per cent	Rate of wages—Cumulative per cent of women receiving								
			Under $6.00	Under $7.00	Under $8.00	Under $9.00	Under $10.00	Under $11.00	Under $12.00	$12.00 and over	Totals
Single	1,781	73.8	17.0	30.2	35.1	47.9	59.9	68.7	76.3	23.7	100.0
Married	290	12.0	8.3	19.0	21.8	34.2	52.1	60.0	68.3	31.7	100.0
Husband at home, contributing	185	7.7	9.2	21.6	25.4	36.7	53.5	60.5	68.6	31.4	100.0
Husband at home, not contributing	56	2.3	3.6	12.5	14.3	28.6	44.7	59.0	66.1	33.9	100.0
Husband not at home, contributing	7	.3	------	------	------	14.3	71.4	71.4	85.7	14.3	100.0
Husband not at home, not contributing	42	1.7	11.9	19.0	19.0	33.3	52.4	57.2	63.7	33.3	100.0
Widowed	187	7.8	2.1	8.5	9.6	17.1	33.1	43.3	55.6	44.4	100.0
Divorced	155	6.4	6.4	13.5	17.4	26.4	40.0	51.6	62.6	37.4	100.0
Totals	2,413	100.0	14.1	26.1	30.4	42.5	55.3	61.6	72.9	27.1	100.0

The figures gathered on home conditions show that 77.2 per cent of the women reported were living at home, and 22.8 per cent were adrift. The wages received by those adrift were considerably higher than those living at home; 40.3 per cent of those adrift received less than $10.00 per week, while 60.6 per cent of those receiving less than this lived at home.

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*Reprint First Biennial Report Industrial Welfare Commission 1913–1914.

TABLE 15. SAN FRANCISCO—MERCANTILE.

Record of Individual Employees—By home condition and present wage.

Home condition	Number considered	Per cent	Rate of wages—Cumulative per cent of women receiving								
			Under $6.00	Under $7.00	Under $8.00	Under $9.00	Under $10.00	Under $11.00	Under $12.00	$12.00 and over	Totals
At home	1,861	77.2	16.9	30.8	35.7	48.4	60.6	69.7	77.2	22.8	100.0
Adrift	552	22.8	5.6	11.7	14.1	24.2	40.3	48.9	59.6	40.4	100.0
Totals	2,413	100.0	14.1	26.1	30.4	42.5	55.6	64.6	72.9	27.1	100.0

TABLE 17. SAN FRANCISCO—MERCANTILE.

Record of Individual Employees—By age and home condition.

Age group	Number considered	Per cent	Home condition			
			At home		Adrift	
			Number	Per cent	Number	Per cent
Under 18 years	277	11.4	269	97.1	8	2.9
18 to 21 years	543	22.5	495	91.2	48	8.8
21 to 25 years	475	19.7	381	80.2	94	19.8
25 years and over	1,118	46.4	716	64.0	402	36.0
Totals	2,413	100.0	1,861	77.1	552	22.9

TABLE 18. SAN FRANCISCO—MERCANTILE.

Record of Individual Employees—By marital condition and home condition.

Marital condition	Number considered	Per cent	Home condition			
			At home		Adrift	
			Number	Per cent	Number	Per cent
Single	1,781	73.8	1,444	81.1	337	18.9
Married	290	12.0	268	92.4	22	7.6
Husband at home, contributing	185	7.7	185	100.0		
Husband at home, not contributing	56	2.3	56	100.0		
Husband not at home, contributing	7	.3	5	71.4	2	28.6
Husband not at home, not contributing	42	1.7	22	52.4	20	47.6
Widowed	187	7.8	78	41.7	109	58.3
Divorced	155	6.4	71	45.8	84	54.2
Totals	2,413	100.0	1,861	77.1	552	22.9

The women adrift were mostly over 25 years of age. Practically all of those under 18 years of age lived at home, only 2.9 per cent being adrift. Between 18 and 21 years, 8.8 per cent were adrift; between 21 and 25 years, 19.8 per cent were adrift, while those 25 years and over 36 per cent were adrift. The largest percentage of those adrift were widows and divorced women. (Tables 17 and 18.)

Native born women made up 85.7 per cent of the total employees scheduled. The percentage of foreign born women was greatest in the workrooms where they constitute 26 per cent of the total. (Table 19.)

The percentage of those adrift was greater in the foreign born than in the native born, being 17.9 per cent in the former and 13.2 per cent in the latter. (Table 20.)

TABLE 19. SAN FRANCISCO—MERCANTILE.

Record of Individual Employees—By occupation and nativity.

Occupation	Number considered	Per cent	Nativity			
			Native		Foreign	
			Number	Per cent	Number	Per cent
Sales	1,055	43.7	939	89.0	116	11.0
Office and clerical	523	21.7	464	88.7	59	11.3
Factory and workroom hands—						
Time	526	21.8	389	74.0	137	26.0
Piecework	37	1.5	3	8.1	34	91.9
All others	272	11.3	272	100.0	----------	----------
Totals	2,413	100.0	2,067	85.7	346	14.3

TABLE 20. SAN FRANCISCO—MERCANTILE.

Record of Individual Employees—By home condition and nativity.

Home condition	Number considered	Per cent	Nativity			
			Native		Foreign	
			Number	Per cent	Number	Per cent
At home	1,822	75.5	1,582	86.8	240	13.2
Adrift	591	24.5	485	82.1	106	17.9
Totals	2,413	100.0	2,067	85.7	346	14.3

Los Angeles Mercantile Establishments.

In Los Angeles individual schedules were obtained from 3316 women employed in mercantile establishments. Of the total number of women scheduled, 47.7 per cent were 25 years and over. The wages received vary with the ages: 97.1 per cent of those under 18 years received less than $10.00 per week; 90.3 per cent of those between 18 and 21; 58.7 per cent of those between 21 and 25, and 22.5 per cent of those 25 years and over, received less than $10.00 per week. (Table 21.)

TABLE 21. LOS ANGELES—MERCANTILE.

Record of Individual Employees—By age and present wage.

Age group	Number considered	Per cent	Rate of wages—Cumulative per cent of women receiving								
			Under $6.00	Under $7.00	Under $8.00	Under $9.00	Under $10.00	Under $11.00	Under $12.00	$12.00 and over	Totals
Under 18 years	466	14.1	52.4	75.6	89.1	95.4	97.1	97.7	98.3	1.7	100.0
18 to 21 years	626	18.8	9.0	20.5	38.2	74.6	90.3	96.8	98.2	1.8	100.0
21 to 25 years	652	19.7	2.6	6.0	14.4	37.1	58.7	77.9	82.8	17.2	100.0
25 years and over	1,572	47.4	1.5	2.0	4.1	10.4	22.5	41.1	47.7	52.3	100.0
Totals	3,316	100.0	10.3	16.6	24.5	39.7	52.9	66.8	71.2	28.8	100.0

Single women comprise 74.5 per cent of those scheduled; married women 12.7 per cent, widows 7.7 per cent, and divorcees 5.1 per cent. Out of the total 423 women, 238 had husbands at home contributing to their support. The widows showed a greater percentage of the higher wage groups, 48 per cent receiving $12.00 and over per week. (Table 22.)

TABLE 22. LOS ANGELES—MERCANTILE.

Record of Individual Employees—By marital condition and present wage.

Marital condition	Number considered	Per cent	Rate of wages—Cumulative per cent of women receiving								
			Under $6.00	Under $7.00	Under $8.00	Under $9.00	Under $10.00	Under $11.00	Under $12.00	$12.00 and over	Totals
Single	2,470	74.5	13.2	21.5	30.8	48.6	60.6	73.0	76.7	23.3	100.0
Married	423	12.7	1.9	2.6	7.3	16.7	34.0	51.5	57.2	42.8	100.0
Husband at home, contributing	238	7.2	2.1	2.9	8.8	21.4	35.3	50.4	58.8	41.2	100.0
Husband at home, not contributing	103	3.1	1.0	2.0	5.9	9.8	31.1	50.5	51.5	48.5	100.0
Husband not at home, contributing	13	.3	7.7	7.7	7.7	23.1	38.5	61.6	61.6	38.4	100.0
Husband not at home, not contributing	69	2.1	1.5	1.5	4.4	10.2	33.4	55.1	59.4	40.6	100.0
Widowed	256	7.7	2.0	2.0	4.3	9.8	25.0	43.4	52.0	48.0	100.0
Divorced	167	5.1	0.6	1.8	6.0	12.0	28.8	49.7	55.1	44.9	100.0
Totals	3,316	100.0	10.3	16.6	24.5	39.7	52.9	66.8	71.2	28.8	100.0

The tabulation of the home conditions of these women shows that 78.8 per cent lived at home and 21.2 per cent were adrift. The wages of those adrift were much higher than the number living at home; 59.9 per cent of those living at home received less than $10.00 per week, while 26.9 per cent of those adrift received less than $10.00 per week. (Table 25.)

TABLE 25. LOS ANGELES—MERCANTILE.

Record of Individual Employees—By home condition and present wage.

Home condition	Number considered	Per cent	Rate of wages—Cumulative per cent of women receiving								
			Under $6.00	Under $7.00	Under $8.00	Under $9.00	Under $10.00	Under $11.00	Under $12.00	$12.00 and over	Totals
At home	2,614	78.8	12.3	20.2	29.3	46.5	59.9	72.1	76.2	23.8	100.0
Adrift	702	21.2	2.7	3.3	6.6	14.4	26.9	47.3	52.9	47.1	100.0
Totals	3,316	100.0	10.3	16.6	24.5	39.7	52.9	66.8	71.2	28.8	100.0

The women adrift were mostly those 25 years and over. Only 1.5 per cent of those under 18 were adrift; between 18 and 21 years, 6.5 per cent; between 21 to 25, 12.3 per cent, while of those 25 years and over 36.5 per cent were adrift. (Table 27.)

TABLE 27. LOS ANGELES—MERCANTILE.
Record of Individual Employees—By age and home condition.

Age group	Number considered	Per cent	Home condition			
			At home		Adrift	
			Number	Per cent	Number	Per cent
Under 18 years	466	14.2	459	98.5	7	1.5
18 to 21 years	626	18.8	585	93.5	41	6.5
21 to 25 years	652	19.8	572	87.7	80	12.3
25 years and over	1,572	47.2	998	63.5	574	36.5
Totals	3,316	100.0	2,614	78.8	702	21.2

The percentage of those adrift ran higher in widows and divorced women. Of the single women, 18.9 per cent were adrift. (Table 28.)

TABLE 28. LOS ANGELES—MERCANTILE.
Record of Individual Employees—By marital condition and home condition.

Marital condition	Number considered	Per cent	Home condition			
			At home		Adrift	
			Number	Per cent	Number	Per cent
Single	2,470	74.5	2,003	81.1	467	18.9
Married	423	12.8	384	90.8	39	9.2
Husband at home, contributing	238	7.2	238	100.0	----------	----------
Husband at home, not contributing	103	3.1	103	100.0	----------	----------
Husband not at home, contributing	13	.4	10	76.9	3	23.1
Husband not at home, not contributing	69	2.1	33	47.8	36	52.2
Widowed	256	7.7	141	55.1	115	44.9
Divorced	167	5.0	86	51.5	81	48.5
Totals	3,316	100.0	2,614	78.8	702	21.2

Native born women made up 19.4 per cent of the total employees. The percentage of foreign born was greatest in the workrooms, where they constituted 17.9 per cent of the total. (Table 29.) The percentage of those adrift was greater in the native born than in foreign born. This is the reverse of the condition in San Francisco.

TABLE 29. LOS ANGELES—MERCANTILE.
Record of Individual Employees—By occupation and nativity.

Occupation	Number considered	Per cent	Nativity			
			Native		Foreign	
			Number	Per cent	Number	Per cent
Sales	1,503	45.3	1,404	93.4	99	6.6
Office and clerical	740	22.3	681	92.0	59	8.0
Factory and workroom hands—						
Time	351	10.6	288	82.1	63	17.9
Piecework	2	.1	1	50.0	1	50.0
All others	720	21.7	625	86.8	95	13.2
Totals	3,316	100.0	2,999	90.4	317	9.6

TABLE 30. LOS ANGELES—MERCANTILE.

Record of Individual Employees—By home condition and nativity.

Home condition	Number considered	Per cent	Nativity			
			Native		Foreign	
			Number	Per cent	Number	Per cent
At home	2,609	78.7	2,346	89.9	263	10.1
Adrift	707	21.3	653	92.4	54	7.6
Totals	3,316	100.0	2,999	90.4	317	9.6

San Francisco Laundries.

Individual schedules were obtained from 665 women employed in laundries in San Francisco. These schedules have been tabulated, showing the wages received by these women in relation to their age, marital condition, number of years worked, number of years in present occupation, home condition and schooling; also showing the relation between home condition and age and marital condition, and between nativity and home condition. The same information has been tabulated for 1167 women employed in the laundries in Los Angeles.

TABLE 39. SAN FRANCISCO—LAUNDRIES.

Record of Individual Employees—By marital condition and present wage.

Marital condition	Number considered	Per cent	Rate of wages—Cumulative per cent of women receiving								
			Under $6.00	Under $7.00	Under $8.00	Under $9.00	Under $10.00	Under $11.00	Under $12.00	$12.00 and over	Totals
Single	290	43.6	------	------	.3	32.4	61.4	78.3	85.5	14.5	100.0
Married	268	40.3	------	.4	.8	46.7	65.7	82.5	99.4	8.6	100.0
Husband at home, contributing	180	27.1	------	------	------	50.5	65.5	81.1	91.7	8.3	100.0
Husband at home, not contributing	61	9.2	------	1.6	3.2	42.6	70.5	88.5	93.4	6.6	100.0
Husband not at home, concontributing	1	.1	------	------	------	------	------	------	------	100.0	100.0
Husband not at home, not contributing	26	3.9	------	------	------	30.8	57.7	80.8	88.5	11.5	100.0
Widowed	66	9.9	------	------	------	42.4	63.6	78.8	86.4	13.6	100.0
Divorced	41	6.2	------	------	------	29.3	56.2	78.1	83.0	17.0	100.0
Totals	665	100.0	------	------	.1	38.8	62.9	79.9	87.8	12.2	100.0

Single women comprise 43.6 per cent of those scheduled; married, 40.3 per cent; widowed, 9.9 per cent, and divorced, 6.2 per cent. Out of the total of 268 married women, 180 had husbands at home contributing to their support. The marital condition did not have any particular bearing on wages received. The large percentage of married women working in laundries as compared with those working in mercantile establishments should be noted. (Table 39.)

TABLE 42. SAN FRANCISCO—LAUNDRIES.

Record of Individual Employees—By home condition and present wage.

Home condition	Number considered	Per cent	Rate of wages—Cumulative per cent of women receiving								
			Under $6.00	Under $7.00	Under $8 00	Under $9.00	Under $10.00	Under $11.00	Under $12.00	$12.00 and over	Totals
At home	487	73.2	------	.2	.6	43.3	63.8	80.7	89.1	10.9	100.0
Adrift	178	23.8	------	------	------	27.0	60.7	78.1	84.3	15.7	100.0
Totals	665	100.0	------	------	.1	38.8	62.9	79.9	87.8	12.2	100.0

The figures gathered on home conditions show that 73.2 per cent of the women scheduled were living at home and 26.8 per cent were adrift. The wages of the women adrift were a little higher than those of the women living at home. (Table 42.)

TABLE 44. SAN FRANCISCO—LAUNDRIES.

Record of Individual Employees—By age and home condition.

Age group	Number considered	Per cent	Home condition			
			At home		Adrift	
			Number	Per cent	Number	Per cent
Under 18 years	41	6.2	29	70.7	12	29.3
18 to 21 years	109	16.4	86	78.9	23	21.1
21 to 25 years	168	25.2	130	77.4	38	22.6
25 years and over	347	52.2	242	69.7	105	30.3
Totals	665	100.0	487	73.2	178	26.8

TABLE 45. SAN FRANCISCO—LAUNDRIES.

Record of Individual Employees—By marital condition and home condition.

Marital condition	Number considered	Per cent	Home condition			
			At home		Adrift	
			Number	Per cent	Number	Per cent
Single	290	43.6	178	61.4	112	38.6
Married	268	40.3	258	96.3	10	3.7
Husband at home, contributing	180	27.1	180	100.0	----------	----------
Husband at home, not contributing	61	9.2	61	100.0	----------	----------
Husband not at home, contributing	1	.1	----------	----------	1	100.0
Husband not at home, not contributing	26	3.9	17	65.4	9	34.6
Widowed	66	9.9	26	39.4	40	60.6
Divorced	41	6.2	25	61.0	16	39.0
Totals	665	100.0	487	73.2	178	26.8

Native born women made up 52.6 per cent of the total number of schedules; foreign born, 47.4 per cent.

The percentage of women adrift was greater in the native born than in the foreign born, being 65.4 per cent in the former and 35.6 per cent in the latter.

Los Angeles Laundries.

In Los Angeles, individual schedules were obtained from 1167 women employed in laundries. Single women comprise 45.8 per cent of those scheduled; married women, 33 per cent; widowed, 12.1 per cent, and divorced, 9.1 per cent. Of the 385 married women, 290 had husbands at home contributing to their support. (Table 49.)

TABLE 49. LOS ANGELES—LAUNDRIES.

Record of Individual Employees—By marital condition and present wage.

Marital condition	Number considered	Per cent	Rate of wages—Cumulative per cent of women receiving								
			Under $6.00	Under $7.00	Under $8.00	Under $9.00	Under $10.00	Under $11.00	Under $12.00	$12.00 and over	Totals
Single	535	45.8	7.5	22.1	58.2	73.9	87.9	91.6	93.7	6.3	100.0
Married	385	33.0	6.8	21.9	54.9	68.9	83.7	90.2	90.7	9.3	100.0
Husband at home, contributing	290	24.9	7.5	23.4	55.1	67.9	83.8	89.3	90.0	10.0	100.0
Husband at home, not contributing	42	3.6	4.8	21.4	61.9	71.4	85.7	95.2	95.2	4.8	100.0
Husband not at home, contributing	7	.6	14.3	42.8	57.1	71.4	71.4	71.4	71.4	28.6	100.0
Husband not at home, not contributing	46	3.9	2.2	8.7	45.6	71.7	82.6	93.5	93.5	6.5	100.0
Widowed	141	12.1	7.1	22.0	53.9	66.0	77.3	84.4	87.9	12.1	100.0
Divorced	106	9.1	4.7	16.0	51.9	67.0	78.3	84.9	86.8	13.2	100.0
Totals	1,167	100.0	7.0	21.5	56.0	70.6	84.3	89.6	91.3	8.7	100.0

Tabulations of the home conditions show that 78.4 per cent of the women scheduled lived at home, while 21.6 per cent were adrift. The wages of the women adrift were a little higher than those living at home. (Table 52.)

TABLE 52. LOS ANGELES—LAUNDRIES.

Record of Individual Employees—By home condition and present wage.

Home condition	Number considered	Per cent	Rate of wages—Cumulative per cent of women receiving								
			Under $6.00	Under $7.00	Under $8.00	Under $9.00	Under $10.00	Under $11.00	Under $12.00	$12.00 and over	Totals
At home	915	78.4	6.3	21.5	56.9	72.1	86.6	91.1	92.2	7.8	100.0
Adrift	252	21.6	9.1	21.0	52.4	65.1	75.8	84.1	88.1	11.9	100.0
Totals	1,167	100.0	7.0	21.5	56.0	70.6	84.3	89.6	91.3	8.7	100.0

TABLE 54. LOS ANGELES—LAUNDRIES.
Record of Individual Employees—By age and home condition.

Age group	Number considered	Per cent	Home condition			
			At home		Adrift	
			Number	Per cent	Number	Per cent
Under 18 years	94	8.0	91	96.8	3	3.2
18 to 21 years	211	18.1	194	91.9	17	8.1
21 to 25 years	213	18.3	167	78.4	46	21.6
25 years and over	649	55.6	463	71.3	186	28.7
Totals	1,167	100.0	915	78.4	252	21.6

TABLE 55. LOS ANGELES—LAUNDRIES.
Record of Individual Employees—By marital condition and home condition.

Marital condition	Number considered	Per cent	Home condition			
			At home		Adrift	
			Number	Per cent	Number	Per cent
Single	535	45.9	437	81.7	98	18.3
Married	385	32.9	360	93.5	25	6.5
Husband at home, contributing	290	24.8	290	100.0	----------	----------
Husband at home, not contributing	42	3.6	42	100.0	----------	----------
Husband not at home, contributing	7	.6	6	85.7	1	14.3
Husband not at home, not contributing	46	3.9	22	47.8	24	52.2
Widowed	141	12.1	62	44.0	79	56.0
Divorced	106	9.1	56	52.8	50	47.2
Totals	1,167	100.0	915	78.4	252	21.6

Native born women represent 73.2 per cent of the total number and foreign born 26.8 per cent. (Table 56.)

The percentage of women adrift was greater in the native born than in the foreign born.

TABLE 56. LOS ANGELES—LAUNDRIES.
Record of Individual Employees—By occupation and nativity.

Occupation	Number considered	Per cent	Nativity			
			Native		Foreign	
			Number	Per cent	Number	Per cent
Sales	----------	----------	----------	----------	----------	----------
Office and clerical	156	13.4	152	97.4	4	2.6
Factory and workroom hands—						
Time	812	69.6	539	66.4	273	33.6
Piecework	78	6.7	53	67.9	25	32.1
All others	121	10.3	110	90.9	11	9.1
Totals	1,167	100.0	854	73.2	313	26.8

TABLE 57. LOS ANGELES—LAUNDRIES.
Record of Individual Employees—By home condition and nativity.

Home condition	Number considered	Per cent	Nativity			
			Native		Foreign	
			Number	Per cent	Number	Per cent
At home	915	78.4	657	71.8	258	28.2
Adrift	252	21.6	197	78.2	55	21.8
Totals	1,167	100.0	854	73.2	313	26.8

CALIFORNIA RETAIL DRY GOODS ASSOCIATION STUDY.

In discussing the living wage and the number of women who must work because of self-dependence or family obligation, it is important to analyze the very valuable information presented to the commission by the California Retail Dry Goods Association in a parallel investigation made by the members of their organization in 1914.

TABLE I. APPENDIX.

Compilation of data concerning women and minors furnished to Retail Dry Goods Association by mercantile establishments throughout the state. (Showing economic condition by age and locality.)

Locality and economic condition	Minors under 18 years		Women 18 years to 25 years		Women over 25 years		Totals	
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
San Francisco—								
*Class A	79	33.5	168	23.3	68	8.1	315	17.6
Class B	126	53.4	350	48.5	195	23.3	671	37.4
Class C	22	9.3	151	20.9	368	44.0	541	30.1
Class D	9	3.8	53	7.3	206	24.6	268	14.9
Totals	236	100.0	722	100.0	837	100.0	1,795	100.0
Los Angeles—								
*Class A	78	36.2	76	17.4	58	7.7	212	15.0
Class B	135	62.8	265	60.8	242	32.0	642	45.6
Class C	1	.5	84	19.3	337	44.5	422	30.0
Class D	1	.5	11	2.5	120	15.8	132	9.4
Totals	215	100.0	436	100.0	757	100.0	1,408	100.0
Oakland—								
*Class A	107	66.1	81	25.2	48	16.1	236	30.2
Class B	46	28.4	130	40.5	82	27.5	258	33.1
Class C	6	3.7	91	28.4	100	33.6	197	25.2
Class D	3	1.8	19	5.9	68	22.8	90	11.5
Totals	162	100.0	321	100.0	298	100.0	781	100.0
San Jose, Stockton, San Diego, Sacramento—								
*Class A	19	26.8	67	36.4	29	14.1	115	24.9
Class B	47	66.2	74	40.2	68	33.0	189	41.0
Class C	1	1.4	32	17.4	73	35.4	106	23.0
Class D	4	5.6	11	6.0	36	17.5	51	11.1
Totals	71	100.0	184	100.0	206	100.0	461	100.0
All other towns—								
*Class A	10	35.7	131	71.6	90	58.5	231	63.3
Class B	18	64.3	13	7.1	28	18.2	59	16.2
Class C	--------	--------	31	16.9	33	21.4	64	17.5
Class D	--------	--------	8	4.4	3	1.9	11	3.0
Totals	28	100.0	183	100.0	154	100.0	365	100.0

*Class A—Those living at home and not depending on their earnings for their support.

Class B—Those living in a home where the breadwinner is either dead or unable to earn enough to support a family, the employee consequently being required to contribute towards the expense of same.

Class C—Those entirely dependent on their own earnings for support.

Class D—Those having others, such as children, parents or other relatives dependent upon them for support.

This table shows that of 4810 women studied by this employers' association—

1109 A or 23.06 per cent lived at home and were not dependent on their earnings for support;
1819 B or 37.81 per cent lived at home and contributed to the family support;
1330 C or 27.65 per cent were self-dependent entirely, and
552 D or 11.48 per cent were self-dependent with others dependent upon them. or a total of 3710 or 77.13 per cent of these women worked because of necessity.

REASONS FOR WOMEN IN INDUSTRY.

One of the questions formerly debated but fortunately now nearly obsolete, is whether women work because of necessity or because of a desire for independence. Economists and students of the industrial problem recognize that as men's earnings are depressed by small wages, higher cost of living and periods of unemployment, just so surely are women and children forced into industrial life to supplement the inadequate family wage.

R. C. Chapin, in his exhaustive study of "Standards of Living Among Workingmen's Families in New York City in 1909," pages 245–6, says that for a family of five—a man, wife and three children under 14 years, that "an income of $900.00 or over probably permits the maintenance of a normal standard, at least so far as the physical man is concerned."

Investigators[1] report that the minimum amount necessary to support a family of five efficiently in the Stock Yards District of Chicago is not less than $800.00 per year.

In California we find in the Sixteenth Biennial Report of the Bureau of Labor Statistics the following tables:

TABLE IX. APPENDIX.

Report of Bureau of Labor Statistics on 1.576 Manufacturing Establishments, showing rates of wages paid to wage earners.

Weekly wage rate	18 years of age and over		Under 18 years of age	
	Males	Females	Males	Females
Under $4	17	108	13	8
$4 to $4.99	35	93	62	46
$5 to $5.99	99	349	136	106
$6 to $6.99	294	1,094	276	202
$7 to $7.99	440	1,197	242	90
$8 to $8.99	540	1,007	126	50
$9 to $9.99	1,089	1,098	174	20
$10 to $10.99	2,251	949	100	21
$11 to $11.99	1,362	458	34	11
$12 to $12.99	5,746	512	65	6
$13 to $13.99	5,198	241	27	----------
$14 to $14.99	3,008	181	9	----------
$15 to $17.99	12,671	340	12	1
$18 to $20.99	7,897	118	2	----------
$21 to $24.99	9,078	36	1	----------
$25 and over	6,644	36	----------	----------
Totals	56,369	7,817	1,279	561

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[1] "Wages and Family Budgets in the Chicago Stockyards District," op. cit., p. 80.

TABLE IXa. APPENDIX.

Report of Bureau of Labor Statistics on 1,576 Manufacturing Establishments, showing rates of wages paid to wage earners (by per cent).

Weekly wage rate	18 years of age and over		Under 18 years of age	
	Males	Females	Males	Females
Under $4	.1	1.4	1.0	1.4
$4 to $4.99		1.2	4.8	8.2
$5 to $5.99	.2	4.5	10.6	18.9
$6 to $6.99	.5	14.0	21.6	36.0
$7 to $7.99	.8	15.3	18.9	16.0
$8 to $8.99	1.0	12.9	9.9	8.9
$9 to $9.99	1.9	14.0	13.6	3.6
$10 to $10.99	4.0	12.1	7.8	3.7
$11 to $11.99	2.4	5.9	2.7	2.0
$12 to $12.99	10.2	6.5	5.1	1.1
$13 to $13.99	9.2	3.1	2.1	
$14 to $14.99	5.3	2.3	.7	
$15 to $17.99	22.5	4.3	.9	.2
$18 to $20.99	14.0	1.5	.2	
$21 to $24.99	16.1	.5	.1	
$25 and over	11.8	.5		
Totals	100.0	100.0	100.0	100.0

TABLE IXb. APPENDIX.

Report of Bureau of Labor Statistics on 1,576 Manufacturing Establishments, showing rates of wages paid to wage earners (by cumulative per cent).

Weekly wage rate	18 years of age and over		Under 18 years of age	
	Males	Females	Males	Females
Under $4.00		1.4	1.0	1.4
Under $5.00	.1	2.6	5.8	9.6
Under $6.00	.3	7.1	16.4	28.5
Under $7.00	.8	21.1	38.0	64.5
Under $8.00	1.6	36.4	56.9	80.5
Under $9.00	2.6	49.3	66.8	89.4
Under $10.00	4.5	63.3	80.4	93.0
Under $11.00	8.5	75.4	88.2	96.7
Under $12.00	10.9	81.3	90.9	98.7
Under $13.00	21.1	87.8	96.0	99.8
Under $14.00	30.3	90.9	98.1	
Under $15.00	35.6	93.2	98.8	
Under $18.00	58.1	97.5	99.7	100.0
Under $21.00	72.1	99.0	99.9	
Under $25.00	88.2	99.5	100.0	
$25.00 and over	11.8	.5		
Totals	100.0	100.0	100.0	100.0

This report shows that of the 56,369 adult males working in 1576 manufacturing establishments in California 35.6 per cent of them receive rates of pay less than $15.00 per week or $780.00 per year; 58.1 per cent or more than half receive rates of pay less than $18.00 per week or $936.00 per year; 72.1 per cent of them receive rates of pay less than $21.00 per week or $1,092.00 per year.

It should be remembered that economists state that in normal times 20 per cent must be deducted from these rates of pay for periods of unemployment. It is therefore evident that the present inadequate wage scale of male workers is doubtless a contributory cause for the presence of the numbers of women in industry.

ESTIMATE BY Y. W. C. A. OF LOS ANGELES.

In getting outside opinion and assistance in the study of the cost of living, the Young Women's Christian Association of Los Angeles contributed from its large experience with working women the following estimated budget as indicative of the minimum amount a self-dependent woman could live on:

CLOTHING.

		Cost of each	Total cost
Dresses	1 best	$10 00	
	1 white	4 00	
	1 house	1 00	
	1 white pique skirt	1 00	$16 00
Aprons	3	25	75
Suits	1 winter		25 00
Coats	1		6 00
Petticoats	2 white	1 00	
	1 colored	1 50	3 50
Underwear	4 vests	15	
	4 combinations	50	2 60
Corsets	2	1 00	2 00
Shoes	2	4 00	8 00
Rubbers	1		75
Stockings	4 cotton	25	
	1 silk	1 00	2 00
Handkerchiefs	12	12½	1 50
Gloves	1 chamoisette	50	
	1 silk	75	
	1 kid	1 25	2 50
Neckwear	3 collars	25	
	3 ties	25	1 50
Shirtwaists	1 silk	2 00	
	4 wash	1 00	6 00
	Total		$86 10

BOARD, LODGING, ETC.

	Cost per week	Total cost per year
Board	$3 00	$156 00
Lunches	90	46 80
Lodgings	1 50	78 00
Laundry	25	13 00
Repair of clothing	05	2 60
Repair of shoes		1 50
Street carfare	60	30 00
Medicine and dentistry		15 00
Insurance		12 50
Association dues		5 00
Church and other contributions		12 50
Newspapers and magazines		3 00
Amusements		10 00
Vacation expenses		15 00
Incidentals		10 00
Total		$410 90
		$497 09 or 9 55 per week

ESTIMATE BY MRS. M. V. GREENE, OF THE EMPORIUM, S. F.

In the fall of 1915, Mrs. M. V. Greene, welfare director of the Emporium of San Francisco, gave her annual talk to the women employees, the subject being "The Cost of Living for Self-Supporting

Girls Receiving Minimum Salaries." With the permission of the Emporium management, we are using the following excerpts which bear upon this subject:

"In planning the clothes budget a chief essential is to consider the clothes you already have, and which have not lost their usefulness. Then plan the budget for the new clothes. In order to get the greatest value, the wearing qualities as well as the attractiveness must be considered.

The following outlines the very least a girl may live on, who is thrifty and provident and who is striving to live up to a normal standard, at the same time keeping her health. The outline also represents that most, if not all, purchases should be made at summer annual or seasonal sales, with the discount of 10 and 15 per cent, and that the girl needs to be able to plan and make over her clothes, and trim at least her every day hats. In this connection I would urge each one of you to take advantage of the sewing and millinery clubs offered by the store, without fee, and for your advantage. The girl must also do her own laundry, such conveniences being available almost everywhere for business girls. We will take an example of a budget for a girl absolutely self-supporting and receiving a salary of $35.00 per month.

The $35.00 per month represents $420.00 per year.

The actual living expenses: The problem of making a wise selection of three plans you all know about depends on how practical a girl may be in addition to her temperament.

BOARD, LODGING, ETC.

		Per month	Per year
First: In a private family or boarding house—			
Room and board		$20 00	$240 00
Carfare		2 80	33 60
Laundry (does her own) gas		25	3 00
Totals		$23 00	$276 00
Second: Living in a girls' club and sharing her room—			
Room and board		$16 00	$192 00
Carfare		2 80	33 60
Laundry (does her own) gas		20	2 40
Totals		$19 00	$228 00
Third: Light housekeeping room—			
Room		$12 00	$144 00
Breakfast	$0 10		
Lunch	15		
Dinner	25		
(Including fruit.)			
	$0 50	15 00	180 00
No carfare.			
Laundry (does her own) gas		1 00	12 00
Totals		$18 00	$336 00

Clothing Expenses.

This outline is an example of the dress budget for a year, which may be used as a basis of minimum requirements and expenses for clothing, purchased at sales with ten per cent discount:

	Cost per unit	Total cost per year	Cost per year less 10 per cent
3 pairs of shoes (soled and heeled)	$3 50	$10 50	$9 45
1 pair silk hose	75		
6 pairs hose (3 pairs for $1.00)	2 00	2 75	2 48
Choice of—			
6 sets of undergarments (combination knit, no ironing required), 50 cents	3 00		
4 pairs of drawers, 50 cents	2 00		
4 corset covers, 50 cents	2 00	7 00	6 30
or			
4 undervests, 25 cents	1 00		
4 muslin combinations, $1.00	4 00	5 00	4 50
3 nightgowns	75	2 25	2 03
2 sateen petticoats	1 00	2 00	1 80
1 silk petticoat	3 00	3 00	2 70
2 pairs corsets	2 00	4 00	3 60
4 business waists	1 00	4 00	3 60
1 fancy waist	3 00	3 00	2 70
2 one-piece dresses	8 00	16 00	14 40
1 coat	12 50	12 50	11 25
1 suit	18 00	18 00	16 20
1 sweater	3 00	3 00	2 70
4 hats (by joining millinery class)	3 50	14 00	12 60
4 pairs gloves	90	3 60	3 24
1 pair best gloves	1 50	1 50	1 35
1 dozen handkerchiefs	1 50	1 50	1 35
1 kimono	1 50	1 50	1 35
1 umbrella (2 years)	2 00	1 00	90
1 pair rubbers (2 years)	50	25	23
Toilet articles and sundries		10 00	10 00
Emergencies and sickness		20 00	20 00
Savings account		?	?
Recreation		13 00	13 00
Total (approximate)			$144 00

	First plan	Second plan	Third plan
Living	$276 00		
Clothing	144 00	144 00	144 00
Totals	$420 00	$372 00	$468 00

First plan, expense and salary equal.

Second plan, at girls' club, $48.00 above expenses.

Third plan, housekeeping, $48.00 in debt.

To sum up the advantages from these findings, the third plan of the light housekeeping is the least desirable from an economic standpoint. You may not agree with me in this, but I have two reasons. The home life is too lonely, unless you have many friends. There is another objection, because to cook for one does not give sufficient variety and too frequently the girl is undernourished. Further, if the girl is tired she is apt to take just what may be ready, rather than bother preparing a wholesome meal. Besides, eating alone is not conducive to good digestion.

The girl whose salary is $40.00 a month may have a better room or may add to her dress or recreation budget and carry a small savings account, having $60.00 over the $35.00 plan.

If you will all join the dressmaking and millinery clubs in spring and fall and learn to remodel your business clothes and hats, you will take much pride in the things you can accomplish, besides having more changes and saving your money for other things.''

SUMMARY OF STUDY.

In conclusion is submitted a summary of all the information available to the commission and which was analyzed by Commissioner Edson and presented to the commission in January, 1916, prior to the holding of the wage board in the canning industry:

''In submitting this study of the cost of living, I have drawn largely from the records, reports and estimates of the Industrial Welfare Commission. The so-called budgets or estimates made out by working women are so incomplete in many cases and the number in each group relatively so small, that they are only suggestive. However, from the data at hand, and from the foregoing budgets contributed by representatives of the Y. W. C. A. and other women conversant with women workers, I have prepared an estimate of the cost of living which appears to be the actual minimum of safety from want for a woman with no means of support but her own labor.

The budgets of the Industrial Welfare Commission, numbering 502, were indicative of the number of garments purchased in certain wage groups.

The amount spent per year is suggestive, although great difference is shown in number and cost and kind of garments worn as underwear—some women wearing a knit vest and muslin drawers, with corset cover and petticoat; others, knit combinations and a chemise and various different modes of dress. I have, therefore, put all underwear in one group, including these various kinds and styles, and believe that my estimate of $7.00 per year is possible—with care in buying.

I submit tables with this report of what our tabulations of estimated budgets of certain essential articles of dress tell in wage groups.

ANNUAL EXPENDITURES FOR CLOTHING BY WAGE GROUPS.

	Under $6.00				$6.00 to $8.00			
	Number schedules considered	Number units per woman	Average price per unit	Average expenditure per woman	Number schedules considered	Number units per woman	Average price per unit	Average expenditure per woman
Suits	13	1.1	$15 25	$16 43	45	1.2	$19 66	$23 12
Coats	9	1.1	6 85	7 61	32	1.1	10 83	11 17
Dresses	15	2.6	4 65	12 09	51	2.5	5 45	13 47
Shoes	22	2.9	2 86	8 31	65	3.0	2 97	8 87
Stockings	21	9.7	27	2 69	60	14.1	25	3 60
Corsets	12	2.2	1 69	3 79	64	2.1	1 46	3 00
Underwear	19			4 81	61			5 93
Totals	111			$55 73	378			$69 16

	$8.00 to $10.00				$10.00 to $12.00			
	Number schedules considered	Number units per woman	Average price per unit	Average expenditure per woman	Number schedules considered	Number units per woman	Average price per unit	Average expenditure per woman
Suits	136	1.3	$18 39	$23 39	93	1.4	$27 54	$37 92
Coats	100	1.1	12 58	13 21	54	1.1	11 94	13 26
Dresses	134	2.2	5 75	12 89	80	2.2	7 56	16 25
Shoes	172	3.0	3 33	10 01	113	3.0	3 59	10 94
Stockings	166	11.0	31	3 38	120	10.8	36	3 85
Corsets	165	2.2	1 73	3 74	107	2.0	2 10	4 21
Underwear	167			6 75	109			7 44
Totals	1,040			$63 37	676			$93 87

	$12.00 and over				All classes			
	Number schedules considered	Number units per woman	Average price per unit	Average expenditure per woman	Number schedules considered	Number units per woman	Average price per unit	Average expenditure per woman
Suits	95	1.3	$21 90	$28 12	382	1.3	$21 44	$27 84
Coats	60	1.1	14 32	15 98	255	1.1	12 44	13 42
Dresses	89	2.5	8 25	20 67	369	2.3	6 82	15 54
Shoes	123	3.0	3 91	11 60	495	3.0	3 45	10 39
Stockings	118	10.6	42	4 43	485	11.2	33	3 75
Corsets	121	1.9	2 42	4 52	469	2.0	1 94	3 95
Underwear	119			8 55	475			7 17
Totals	725			$93 87				

BOARD AND ROOM.

I would add that from the studies made by our agents in San Francisco, Los Angeles, Oakland, Sacramento, and San Diego, I think we are safe in concluding that any sum under $25.00 per month for board and room would be unsafe, except in some subsidized boarding houses, such as the Y. W. C. A., the Mary Elizabeth Inn, Salvation Army Home and others. These are entirely inadequate to be considered as a possible place for living for all girls on a minimum basis. Los Angeles working women live almost entirely in furnished rooms, flats, or small apartments. In the preceding estimate of Mrs. M. V. Greene, of San Francisco, she puts $12.00 a month as the least a woman can pay for a room alone in a safe part of the city. In Los Angeles, rooms are available for $2.50 per week. It does not seem possible for a woman to board by herself on less than $15.00 per month, or $.50 per day. This sum of $25.00 per month would be about 83 cents per day, or $5.81 per week for room and board.

In analyzing the tables of the first biennial report and reprinted in this study, it is apparent that not a city furnishes room and board in quarters suitable for women alone under $25.00 per month, as the following table shows:

TABLE 76. SAN FRANCISCO BOARDING AND LODGINGS.

Total visited	46
Offering room and 3 meals	31
Those below $25 per month	7
1 inside room, but good, per month	$22 50
1 poor, per month	20 00
1 good, per month	20 00
1 inside, but fair, per month	20 00
1 good, per week	5 00
1 good, per week	5 00
1 outside, good, per month	22 50

TABLE 77. LOS ANGELES BOARDING AND LODGINGS.

Total visited	36
Offering room and 3 meals	6
Those below $25 per month	1
1 private family, per month	$27 50
1 boarding house, poor, per week	4 50
1 boarding house, poor, per week	6 00
1 boarding house, good, per week	8 00
1 hotel, fair, per month	35 00
1 hotel, poor, per month	30 00

TABLE 78. SACRAMENTO BOARDING AND LODGINGS.

Total visited	20
Offering room and 3 meals	16
Under $25 per month	7
1 private home, good, per month	$20 00
1 private home, poor, per week	5 60
1 private home, fair, per month	23 00
1 private home, fair, per month	20 00
1 private home, fair, per month	16 00
1 private home, fair, per month	20 00
1 private home, good, per month	22 50
1 private home, good, per month	22 50

TABLE 79. OAKLAND BOARDING AND LODGINGS.

Total visited	26
Offering room and 3 meals	22
Under $25 per month	3
1 private home, fair, per week	$5 00
1 private home, fair, per week	5 50
1 private home, fair, per month	22 50

TABLE 80. SAN DIEGO BOARDING AND LODGINGS.

Total visited	17
Offering room and 3 meals	4
Under $25 per month	1
1 private home, fair, per month	$23 00
1 boarding house, good, per month	27 50
1 boarding house, poor, per week	6 75
1 boarding house, good, per month	35 00

Rooms alone from $2.00 per week to $3.00 per week; one listed at $1.50 per week, or $5.00 per month in private home.

ESTIMATE OF MINIMUM "COST OF LIVING" MADE IN 1914.

	Units	Cost per unit	Per year
Board and room		$25 00	$300 00
Shoes	3	3 50	10 50
Corsets	2	2 00	4 00
Petticoats	3		5 00
Stockings	12	25	3 00
Nightgowns	3		2 50
Underwear			7 00
Dresses	2	9 00	18 00
Coat	1	12 50	12 50
Suit	1	20 00	20 00
Sweater	1		3 00
Hats	3		12 50
Gloves	2	1 50	3 00
Handkerchiefs	12	125	1 50
Kimono	1	1 50	1 50
Waists	4	3 at 1 00 1 at 3 00	6 00
Umbrella	1		1 50
Rubbers	1		75
Carfare		(per week) 60	31 20
Sundries (toilet)			10 00
Medical and dental			20 00
Vacation and amusement			15 00
Laundry			12 00
Per year			$500 45
Per week			9 63

This estimate was submitted to Misses Hagan, Cummings and Wunderlich, representative officers of the women's trades unions in San Francisco. They criticized the estimate as follows, but wish to go on record as not approving of any minimum wage less than $12.00 per week.

	Units	Cost per unit	Per year
Board and room			$300 00
Shoes			10 50
Corsets	2	$2 50	5 00
Petticoats	3	2 at 1 25; 1 at 3 50	6 00
Stockings	12	25	3 00
Nightgowns	4	1 00	4 00
Underwear		4 knit at 1 00 4 muslin at 1 00	8 00
Dresses	2	9 00	18 00
Coat			12 50
Suit			22 50
Hats	3	5 00	15 00
Sweater			3 00
Gloves	2	1 50	3 00
Handkerchiefs	12	125	1 50
Kimono			1 50
Waists		2 at 1 00 2 at 1 50 1 at 3 00	8 00
Umbrella			1 50
Rubbers			75
Carfare			31 20
Sundries			10 00
Medical and dental			20 00
Vacation			15 00
Laundry		(per week) 70	36 40
Per year			$536 35
Per week			10 31

In closing, I would suggest that in the consideration of this question we keep in mind the fundamental costs common to *all* women who work, so that if, after further study of the various industries we find that there are occupational needs developed, we can add them to the common basis.

I dislike to put forth a statement of the cost of living that can not be approximated by women of one year's experience in *any* industry in California.''

APPRENTICESHIP PROBLEM.

As some of the states fixing minimum wages found that it was difficult to prevent injustice being done the inexperienced worker without providing for and controlling the apprentice or learner's period, the commission asked the legislature of 1915 for this power, which was granted by amending section 8 (*b*) and (*c*) of the law.

> Sec. 8 (as amended, Stats. 1915, Chap. 571). (*a*) For any occupation in which a minimum wage has been established, the commission may issue to a woman physically defective by age or otherwise, a special license authorizing the employment of such licensee, for a period of six months, for a wage less than such legal minimum wage; and the commission shall fix a special minimum wage for such person. Any such license may be renewed for like periods of six months.
>
> (*b*) For any occupation in which a minimum wage has been established, the commission may issue to an apprentice or learner, a special license authorizing the employment of such apprentice or learner, for such time and under such conditions as the commission may determine at a wage less than such legal minimum wage; and the commission shall fix a special wage for such apprentice or learner.
>
> (*c*) The commission may fix the maximum number of women, and minors under eighteen years of age, to be employed under the licenses provided for in subdivisions (*a*) and (*b*) of this section in any occupation, trade, industry or establishment in which a minimum wage has been established.

As indicated in the First Biennial Report we find that in 1914 there were 1371 minors, or 11.2 per cent, among the women employed in the mercantile industries.

SAN FRANCISCO MERCANTILE ESTABLISHMENTS.

That there is a distinct advance in wages with age, education and experience is shown in the following tables from the First Biennial Report:

"Individual schedules showing relation of age, education and experience on wages in the mercantile industry of San Francisco and Los Angeles:

TABLE 11. SAN FRANCISCO—MERCANTILE.

Record of Individual Employees—By age and present wage.

Age group	Number considered	Per cent	Rate of wages—Cumulative per cent of women receiving								
			Under $6.00	Under $7.00	Under $8.00	Under $9.00	Under $10.00	Under $11.00	Under $12.00	$12.00 and over	Totals
Under 18 years	277	11.4	65.7	86.7	90.7	96.1	98.6	99.3	99.3	.7	100.0
18 to 21 years	543	22.5	18.1	42.8	52.7	72.8	85.5	92.7	96.0	4.0	100.0
21 to 25 years	475	19.7	5.7	14.1	19.8	35.8	51.6	65.9	77.3	22.7	100.0
25 years and over	1,118	46.4	3.0	8.1	9.1	17.3	32.2	41.8	53.2	46.8	100.0
Totals	2,413	100.0	14.1	26.1	30.4	42.5	55.6	64.6	72.9	27.1	100.0

In San Francisco the tabulations of the women scheduled show that 46.4 per cent of the women were 25 years or over.

The wages seem to bear a marked relation to the age of the employees: 98.6 per cent of those under 18 years received less than $10.00 per week; 85.5 per cent of those between 18 and 21 years; 51.6 per cent of those between 21 and 25 years, and 32.2 per cent of those 25 years and over received less than this amount. (Table 11.)

TABLE 13. SAN FRANCISCO—MERCANTILE.

Record of Individual Employees—By years working and present wage.

Years working	Number considered	Per cent	Rate of wages—Cumulative per cent of women receiving								
			Under $6.00	Under $7.00	Under $8.00	Under $9.00	Under $10.00	Under $11.00	Under $12.00	$12.00 over and	Totals
Less than 6 months	101	4.2	57.4	76.2	79.2	87.1	96.0	96.0	98.0	2.0	100.0
6 months to 1 year	141	5.8	51.8	68.8	77.3	89.4	95.8	97.2	97.2	2.8	100.0
1 year to 2 years	268	11.1	32.9	55.3	62.0	78.0	90.3	92.9	95.5	4.5	100.0
2 years to 3 years	237	9.8	19.4	39.6	46.8	62.4	77.6	87.3	92.8	7.2	100.0
3 years to 4 years	221	9.2	13.1	31.7	40.3	61.1	74.2	83.7	90.0	10.0	100.0
4 years to 5 years	223	9.2	6.3	22.9	26.5	41.3	58.3	73.1	83.9	16.1	100.0
5 years to 10 years	681	28.2	3.6	10.1	13.3	25.8	42.3	56.0	66.4	33.6	100.0
10 years to 15 years	320	13.3	2.2	5.3	6.2	12.1	22.4	28.7	41.8	58.2	100.0
15 years and over	221	9.2	.5	3.2	3.7	5.5	13.6	21.3	33.5	66.5	100.0
Totals	2,413	100.0	14.1	26.1	30.4	42.5	55.6	64.6	72.9	27.1	100.0

TABLE 14. SAN FRANCISCO—MERCANTILE.

Record of Individual Employees—By years in present occupation and present wage.

Years in present occupation	Number considered	Per cent	Rate of wages—Cumulative per cent of women receiving								
			Under $6.00	Under $7.00	Under $8.00	Under $9.00	Under $10.00	Under $11.00	Under $12.00	$12.00 and over	Totals
Less than 6 months	323	13.4	37.5	55.8	59.5	72.5	84.9	89.2	93.5	6.5	100.0
6 months to 1 year	342	14.2	32.2	49.2	55.6	68.2	80.2	86.3	90.1	9.9	100.0
1 years to 2 years	400	16.5	16.7	36.0	44.0	63.2	78.7	85.2	90.2	9.8	100.0
2 years to 3 years	296	12.3	7.7	22.6	27.7	43.2	61.5	74.3	81.7	18.3	100.0
3 years to 4 years	202	8.3	5.0	18.4	24.3	39.1	55.9	68.8	78.7	21.3	100.0
4 years to 5 years	166	6.8	2.4	8.4	10.8	21.0	36.7	52.4	71.1	28.9	100.0
5 years to 10 years	466	19.3	.8	3.4	4.7	12.2	22.3	33.7	44.6	55.4	100.0
10 years to 15 years	154	6.3	1.3	2.0	2.0	3.3	10.4	15.0	28.6	71.4	100.0
15 years and over	64	2.4	------	1.6	1.6	1.6	4.7	12.5	25.0	75.0	100.0
Totals	2,413	100.0	14.1	26.1	30.4	42.5	55.6	64.6	72.9	27.1	100.0

The relation between experience and wages received is brought out in Tables 13 and 14. Table 13 shows the years worked and Table 14 the years in present occupation. Of the women scheduled, 10 per cent have been working less than one year, whereas 27.6 per cent have been in present occupation less than one year. The tabulations show that there is not a very decided increase in wages until after two years' experience.

TABLE 16. SAN FRANCISCO—MERCANTILE.

Record of Individual Employees—By schooling and present wage.

Schooling	Number considered	Per cent	Rate of wages—Cumulative per cent of women receiving								
			Under $6.00	Under $7.00	Under $8.00	Under $9.00	Under $10.00	Under $11.00	Under $12.00	$12.00 and over	Totals
Under fifth grade	135	5.6	8.1	11.8	14.8	25.9	35.5	45.1	51.8	48.2	100.0
Fifth grade	63	2.6	20.7	30.2	38.1	42.9	54.0	65.1	68.3	31.7	100.0
Sixth grade	133	5.5	24.8	41.3	47.3	58.6	66.9	70.7	76.0	24.0	100.0
Seventh grade	256	10.6	25.0	40.2	48.0	62.5	71.1	77.3	82.0	18.0	100.0
Eighth grade	1,129	46.8	14.3	28.4	32.4	44.6	58.9	67.4	74.7	25.3	100.0
High school	470	19.5	9.8	18.9	22.1	33.2	48.3	58.9	71.5	28.5	100.0
University	16	.7	18.7	37.5	37.5	43.7	43.7	50.0	62.5	37.5	100.0
Business college	169	7.0	5.3	11.8	15.3	31.3	48.5	65.1	78.7	21.3	100.0
Not stated	42	1.7	2.4	4.8	4.8	14.3	19.1	19.1	28.6	71.4	100.0
Totals	2,413	100.0	14.1	26.1	30.4	42.5	55.6	64.6	72.9	27.1	100.0

In Table 16 there is presented an interesting field for study in the relation between schooling and wages. The tabulations show that 46.8 per cent of the women had completed the eighth grade.

LOS ANGELES MERCANTILE ESTABLISHMENTS.

In Los Angeles individual schedules were obtained from 3,316 women employed in mercantile establishments. Of the entire number of women scheduled, 47.4 per cent were twenty-five years and over.

TABLE 21. LOS ANGELES—MERCANTILE.

Record of Individual Employees—By age and present wage.

Age group	Number considered	Per cent	Rate of wages—Cumulative per cent of women receiving								
			Under $6.00	Under $7.00	Under $8.00	Under $9.00	Under $10.00	Under $11.00	Under $12.00	$12.00 and over	Totals
Under 18 years	466	14.1	52.4	75.6	89.1	95.4	97.1	97.7	98.3	1.7	100.0
18 to 21 years	626	18.8	9.0	20.5	38.2	74.6	90.3	96.8	98.2	1.8	100.0
21 to 25 years	652	19.7	2.6	6.0	14.4	37.1	58.7	77.9	82.8	17.2	100.0
25 years and over	1,572	47.4	1.5	2.0	4.1	10.4	22.5	41.1	47.7	52.3	100.0
Totals	3,316	100.0	10.3	16.6	24.5	39.7	52.9	66.8	71.2	28.8	100.0

The tabulations of experience show that 11.3 per cent had been working less than one year, whereas 30.0 per cent had been in the present occupation less than one year. There were more women that had been working over five years than under five years, although the majority had been in present occupation less than three years. (Tables 23-24.)

TABLE 23. LOS ANGELES—MERCANTILE.

Record of Individual Employees—By years working and present wage.

Years working	Number considered	Per cent	Rate of wages—Cumulative per cent of women receiving								
			Under $6.00	Under $7.00	Under $8.00	Under $9.00	Under $10.00	Under $11.00	Under $12.00	$12.00 and over	Totals
Less than 6 months	151	4.6	51.0	63.6	72.9	84.8	88.8	93.4	94.1	5.9	100.0
6 months to 1 year	222	6.7	48.6	63.0	76.1	90.5	95.9	97.7	98.2	1.8	100.0
1 year to 2 years	305	9.2	24.3	44.6	60.0	78.7	89.9	93.2	94.8	5.2	100.0
2 years to 3 years	358	10.8	9.9	23.0	40.0	66.5	81.6	89.7	91.9	8.1	100.0
3 years to 4 years	302	9.1	3.6	10.2	23.5	52.3	71.5	87.1	89.1	10.9	100.0
4 years to 5 years	262	7.9	2.3	9.2	16.5	42.4	60.7	80.9	87.0	13.0	100.0
5 years to 10 years	872	26.2	2.1	3.0	7.7	20.7	38.0	59.6	65.8	34.2	100.0
10 years to 15 years	450	13.6	.8	1.5	3.5	8.6	18.2	33.1	41.5	58.5	100.0
15 years and over	394	11.9	1.8	2.1	2.6	5.6	13.5	27.9	32.2	67.8	100.0
Totals	3,316	100.0	10.3	16.6	24.5	39.7	52.9	66.8	71.2	28.8	100.0

TABLE 24. LOS ANGELES—MERCANTILE.

Record of Individual Employees—By years in present occupation and present wage.

Years in present occupation	Number considered	Per cent	Rate of wages—Cumulative per cent of women receiving								
			Under $6.00	Under $7.00	Under $8.00	Under $9.00	Under $10.00	Under $11.00	Under $12.00	$12.00 and over	Totals
Less than 6 months	484	14.6	28.3	39.4	51.2	73.3	82.6	89.4	91.3	8.7	100.0
6 months to 1 year	510	15.4	22.9	37.2	49.4	69.2	81.6	90.6	92.0	8.0	100.0
1 year to 2 years	545	16.4	9.2	18.2	31.8	51.6	70.5	79.3	82.4	17.6	100.0
2 years to 3 years	359	10.8	5.3	10.9	23.2	47.1	62.4	76.0	80.2	19.8	100.0
3 years to 4 years	283	8.5	2.5	5.3	9.9	23.7	41.7	64.7	69.6	30.4	100.0
4 years to 5 years	240	7.3	.4	1.7	4.2	16.3	30.1	55.9	64.2	35.8	100.0
5 years to 10 years	586	17.7	1.2	1.7	2.6	7.4	20.0	41.0	49.0	51.0	100.0
10 years to 15 years	209	6.3	.5	.5	1.0	3.4	7.2	21.1	27.3	72.7	100.0
15 years and over	100	3.0	1.0	1.0	1.0	3.0	8.0	15.0	19.0	81.0	100.0
Totals	3,316	100.0	10.3	16.6	24.5	39.7	52.9	66.8	71.2	28.8	100.0

TABLE 26. LOS ANGELES—MERCANTILE.

Record of Individual Employees—By schooling and present wage.

Schooling	Number considered	Per cent	Rate of wages—Cumulative per cent of women receiving								
			Under $6.00	Under $7.00	Under $8.00	Under $9.00	Under $10.00	Under $11.00	Under $12.00	$12.00 and over	Totals
Under fifth grade	39	1.2	------	------	5.1	12.8	28.2	48.7	56.4	43.6	100.0
Fifth grade	59	1.8	17.0	27.2	35.7	49.2	59.4	72.9	74.6	25.4	100.0
Sixth grade	114	3.4	18.4	22.8	29.0	43.9	57.1	71.1	74.6	25.4	100.0
Seventh grade	288	8.7	17.0	27.1	37.8	44.5	60.5	69.9	71.6	18.4	100.0
Eighth grade	1,329	40.0	13.7	23.1	32.8	49.7	60.3	73.7	77.0	23.0	100.0
High school	1,120	33.8	6.3	10.1	16.5	31.5	47.1	61.8	67.5	32.5	100.0
University	40	1.2	------	2.5	5.0	20.0	35.0	55.0	57.5	42.5	100.0
Business college	157	4.8	1.2	2.5	8.2	19.7	31.2	46.5	55.4	44.6	100.0
Not stated	170	5.1	2.4	3.0	6.5	13.5	27.6	44.1	50.6	49.4	100.0
Totals	3,316	100.0	10.3	16.6	24.5	39.7	52.9	66.8	71.2	28.8	100.0

A noticeable feature in the tabulation of schooling of women employed in the mercantile establishments in Los Angeles was that 33.8 per cent had attended high school, as against 19.5 per cent in San Francisco. (Table 26.)

Individual schedules showing relation of age, education and experience on wages in laundry trade.

SAN FRANCISCO LAUNDRIES.

Individual schedules were obtained from 665 women employed in laundries in San Francisco.

TABLE 38. SAN FRANCISCO—LAUNDRIES.

Record of Individual Employees—By age and present wage.

Age group	Number considered	Per cent	Rate of wages—Cumulative per cent of women receiving								
			Under $6.00	Under $7.00	Under $8.00	Under $9.00	Under $10.00	Under $11.00	Under $12.00	$12.00 and over	Totals
Under 18 years	41	6.1	------	------	2.4	58.5	92.7	97.6	97.6	2.4	100.0
18 to 21 years	109	16.4	------	------	------	40.4	74.3	91.7	97.2	2.8	100.0
21 to 25 years	168	25.3	------	------	------	31.0	76.8	86.3	93.4	6.6	100.0
25 years and over	347	52.2	------	.3	.6	40.1	49.3	71.2	81.0	19.0	100.0
Totals	665	100.0	------	------	.1	38.8	62.9	79.9	87.8	12.2	100.0

In San Francisco, the tabulation of the women scheduled showed 6.1 per cent under 18 years; 16.4 per cent, 18 to 21 years; 25.3 per cent, 21 to 25 years, and 52.2 per cent, 25 years and over. (Table 38.)

TABLE 40. SAN FRANCISCO—LAUNDRIES.

Record of Individual Employees—By years working and present wage.

Years working	Number considered	Per cent	Rate of wages—Cumulative per cent of women receiving								
			Under $6.00	Under $7.00	Under $8.00	Under $9.00	Under $10.00	Under $11.00	Under $12.00	$12.00 and over	Totals
Less than 6 months	30	4.5	------	------	3.3	63.3	86.7	100.0	------	------	100.0
6 months to 1 year	34	5.1	------	------	------	52.9	91.1	97.0	100.0	------	100.0
1 year to 2 years	64	9.6	------	------	------	54.7	90.6	93.7	100.0	------	100.0
2 years to 3 years	82	12.3	------	------	------	50.0	74.4	85.4	92.7	7.3	100.0
3 years to 4 years	49	7.4	------	------	------	49.0	77.6	87.8	95.9	4.1	100.0
4 years to 5 years	59	8.9	------	------	------	23.7	59.3	86.4	96.6	3.4	100.0
5 years to 10 years	168	25.3	------	------	------	28.6	51.2	76.8	86.9	13.1	100.0
10 years to 15 years	92	13.8	------	------	------	33.7	46.7	67.4	76.1	23.9	100.0
15 years and over	87	13.1	------	1.2	2.4	33.4	47.2	62.1	69.0	31.0	100.0
Totals	665	100.0	------	------	.1	38.8	62.9	79.9	87.8	12.2	100.0

TABLE 41. SAN FRANCISCO—LAUNDRIES.

Record of individual Employees—By years in present occupation and present wage.

Years in present occupation	Number considered	Per cent	Rate of wages—Cumulative per cent of women receiving								
			Under $6.00	Under $7.00	Under $8.00	Under $9.00	Under $10.00	Under $11.00	Under $12.00	$12.00 and over	Totals
Less than 6 months	65	9.8	------	------	3.1	58.5	92.3	100.0	------	------	100.0
6 months to 1 year	88	13.3	------	------	------	48.9	83.0	93.2	97.7	2.3	100.0
1 year to 2 years	113	17.0	------	------	------	52.2	82.3	93.8	97.3	2.7	100.0
2 years to 3 years	94	14.1	------	------	------	42.6	68.1	84.1	91.5	8.5	100.0
3 years to 4 years	79	11.9	------	------	------	40.5	59.5	84.8	92.4	7.6	100.0
4 years to 5 years	42	6.4	------	------	------	14.3	33.3	66.6	83.3	16.7	100.0
5 years to 10 years	125	18.8	------	------	------	23.2	40.8	60.0	73.6	26.4	100.0
10 years to 15 years	43	6.3	------	------	------	23.3	32.6	60.5	72.1	27.9	100.0
15 years and over	16	2.4	------	6.2	6.2	12.4	18.6	24.8	37.4	62.6	100.0
Totals	635	100.0	------	------	.1	38.8	62.9	79.9	87.8	12.2	100.0

There is some relation between the experience and wages received, but this is not very marked. (Tables 40-41.)

TABLE 43. SAN FRANCISCO—LAUNDRIES.

Record of Individual Employees—By schooling and present wage.

Schooling	Number considered	Per cent	Rate of wages—Cumulative per cent of women receiving								
			Under $6.00	Under $7.00	Under $8.00	Under $9.00	Under $10.00	Under $11.00	Under $12.00	$12.00 and over	Totals
Under fifth grade	169	25.4	------	------	.6	49.7	70.4	83.4	90.5	9.5	100.0
Fifth grade	64	9.6	------	------	------	39.1	61.0	76.6	87.5	12.5	100.0
Sixth grade	86	12.9	------	------	------	30.2	58.1	80.2	88.4	11.6	100.0
Seventh grade	73	11.0	------	------	------	35.6	65.8	83.6	87.7	12.3	100.0
Eighth grade	147	22.1	------	------	------	25.8	51.6	74.8	85.7	14.3	100.0
High school	20	3.0	------	------	------	40.0	65.0	75.0	80.0	20.0	100.0
University	1	.2	------	------	------	------	------	------	------	100.0	100.0
Business college	6	.9	------	------	------	------	16.7	33.4	33.4	66.6	100.0
Not stated	99	14.9	------	1.1	2.2	52.6	73.8	85.9	91.9	8.1	100.0
Totals	665	100.0	------	------	.1	38.8	62.9	79.9	87.8	12.2	100.0

The tabulations do not show a very strong relation between schooling and wages received (Table 43), almost 60 per cent of the women having received less than a grammar school education.

LOS ANGELES LAUNDRIES.

In Los Angeles individual schedules were obtained from 1,167 women employed in laundries. Of this number 8.1 per cent were under 18 years; 18.1 per cent, from 18 to 21 years; 18.2 per cent, 21 to 25 years, and 55.6 per cent, 25 years and over. (Table 48.)

TABLE 48.—LOS ANGELES—LAUNDRIES.

Record of Individual Employees—By age and present wage.

Age group	Number considered	Per cent	Rate of wages—Cumulative per cent of women receiving								
			Under $6.00	Under $7.00	Under $8.00	Under $9.00	Under $10.00	Under $11.00	Under $12.00	$12.00 and over	Totals
Under 18 years	94	8.1	2.2	25.6	79.8	90.4	97.8	97.8	98.9	1.1	100.0
18 to 21 years	211	18.1	6.6	19.4	59.7	78.2	92.9	95.3	96.7	3.3	100.0
21 to 25 years	213	18.2	7.5	17.4	54.5	70.0	84.1	91.6	93.9	6.1	100.0
25 years and over	649	55.6	7.6	22.8	51.8	65.5	79.7	86.0	87.7	12.3	100.0
Totals	1,167	100.0	7.0	21.5	56.0	70.6	84.3	89.6	91.3	8.7	100.0

TABLE 50. LOS ANGELES—LAUNDRIES.

Record of Individual Employees—By years working and present wage.

Years working	Number considered	Per cent	Rate of wages—Cumulative per cent of women receiving								
			Under $6.00	Under $7.00	Under $8.00	Under $9.00	Under $10.00	Under $11.00	Under $12.00	$12.00 and over	Totals
Less than 6 months	57	4.9	19.3	56.1	87.7	94.7	100.0	------	------	------	100.0
6 months to 1 year	80	6.9	7.5	27.5	77.5	92.5	98.8	100.0	------	------	100.0
1 year to 2 years	131	11.2	4.6	22.2	68.0	80.2	93.9	97.7	98.5	1.5	100.0
2 years to 3 years	108	9.3	.9	12.9	57.4	73.1	91.6	95.3	97.2	2.8	100.0
3 years to 4 years	113	9.7	8.0	27.5	63.8	74.4	92.1	95.6	95.6	4.4	100.0
4 years to 5 years	88	7.5	5.7	13.7	52.3	73.9	84.1	90.9	90.9	9.1	100.0
5 years to 10 years	307	26.3	8.8	20.2	49.8	64.8	79.1	87.2	89.2	10.8	100.0
10 years to 15 years	154	13.2	5.8	18.8	46.1	59.7	74.0	79.2	83.1	16.9	100.0
15 years and over	129	11.1	5.4	14.7	37.2	55.8	70.5	77.5	81.4	18.6	100.0
Totals	1,167	100.0	7.0	21.5	56.0	70.6	84.3	89.6	91.3	8.7	100.0

TABLE 51. LOS ANGELES—LAUNDRIES.

Record of Individual Employees—By years in present occupation and present wage.

Years in present occupation	Number considered	Per cent	Rate of wages—Cumulative per cent of women receiving								
			Under $6.00	Under $7.00	Under $8.00	Under $9.00	Under $10.00	Under $11.00	Under $12.00	$12.00 and over	Totals
Less than 6 months	231	19.8	16.4	42.4	77.5	89.2	97.8	99.1	99.1	.9	100.0
6 months to 1 year	197	16.9	10.1	27.9	66.0	80.2	94.9	98.0	98.5	1.5	100.0
1 year to 2 years	235	20.1	6.4	20.0	58.7	73.6	90.2	95.3	97.0	3.0	100.0
2 years to 3 years	146	12.5	4.1	16.4	52.7	71.9	85.6	91.1	93.8	6.2	100.0
3 years to 4 years	131	11.2	1.5	12.9	38.9	53.4	70.2	76.3	78.6	21.4	100.0
4 years to 5 years	66	5.6	------	4.6	41.0	54.6	63.7	75.8	77.3	22.7	100.0
5 years to 10 years	135	11.6	------	3.7	32.6	46.7	61.5	72.6	76.3	23.7	100.0
10 years to 15 years	17	1.5	------	------	35.3	52.9	64.7	70.6	82.4	17.6	100.0
15 years and over	9	.8	------	11.1	11.1	44.4	66.6	77.7	77.7	22.3	100.0
Totals	1,167	100.0	7.0	21.5	56.0	70.6	84.3	89.6	91.3	8.7	100.0

There were no definite relations between experience and wages received, except that after three years there is rather a marked increase. (Tables 50-51.)

TABLE 53. LOS ANGELES—LAUNDRIES.

Record of Individual Employees—By schooling and present wage.

Schooling	Number considered	Per cent	Rate of wages—Cumulative per cent of women receiving								
			Under $6.00	Under $7.00	Undet $8.00	Under $9.00	Under $10.00	Under $11.00	Under $12.00	$12.00 and over	Totals
Under fifth grade	158	13.6	.6	20.2	60.7	79.1	89.2	94.3	94.9	5.1	100.0
Fifth grade	108	9.3	6.4	14.7	60.1	73.1	82.4	89.8	90.7	9.3	100.0
Sixth grade	134	11.5	3.0	16.4	58.9	73.1	87.3	92.5	93.3	6.7	100.0
Seventh grade	157	13.5	5.7	14.6	53.5	68.2	82.2	87.9	93.0	7.0	100.0
Eighth grade	316	27.1	10.8	26.0	54.8	69.3	84.5	88.3	89.2	10.8	100.0
High school	140	12.0	13.6	32.2	55.7	67.1	85.7	90.0	90.0	10.0	100.0
University	4	.1	------	25.0	75.0	75.0	100.0	------	------	------	100.0
Business college	27	2.3	7.4	22.2	33.3	44.4	51.8	66.6	81.4	18.6	100.0
Not stated	123	10.6	4.1	18.7	53.7	70.8	83.8	90.3	91.9	8.1	100.0
Totals	1,167	100.0	7.0	21.5	56.0	70.6	84.3	89.6	91.3	8.7	100.0

As in San Francisco, education had little bearing on wages received. Almost 50 per cent of women employed in laundries had less than a grammar school education. (Table 53.)

The very interesting information furnished the commission in 1914 by the Retail Dry Goods Association in the following Table II (Appendix) from the first biennial report shows the increase in salary, age and length of service in different localities.

TABLE II. APPENDIX.

Compilation of data concerning women and minors furnished to Retail Dry Goods Association by mercantile establishments throughout the state. (Showing increase in salary by age, locality and length of service.)

Locality, age and length of service	Number of employees	Average salary per week		Per cent of increase
		Initial	Present	
San Francisco—				
Under 18 years:				
Less than 1 year	187	$4 78	$5 26	10.0
1 year to 3 years	49	4 02	6 04	50.0
Totals	236	$4 62	$5 42	17.3
18 to 25 years:				
Less than 1 year	418	$7 26	$7 68	5.8
1 and 2 years	195	6 66	8 43	26.1
3 to 5 years	80	5 98	9 66	62.3
Over 5 years	29	6 10	13 38	103.0
Totals	722	$6 90	$8 29	20.2
Over 25 years:				
Less than 1 year	399	$10 28	$10 62	3.3
1 and 2 years	241	10 22	11 27	10.3
3 to 5 years	111	10 77	12 15	18.3
Over 5 years	86	9 24	13 18	42.6
Totals	837	$10 15	$11 27	11.0
Grand totals	1,795	$8 12	$9 30	14.5
Los Angeles—				
Under 18 years:				
Less than 1 year	139	$4 86	$5 36	10.3
1 to 3 years	76	4 20	6 71	60.0
Totals	215	$4 63	$5 84	26.1
18 to 25 years:				
Less than 1 year	183	$6 87	$8 03	16.9
1 and 2 years	165	6 50	8 49	30.8
3 to 5 years	68	5 81	8 94	53.9
Over 5 years	20	5 15	10 85	110.7
Totals	436	$6 48	$8 48	30.9
Over 25 years:				
Less than 1 year	275	$10 17	$10 48	2.5
1 and 2 years	258	9 47	10 80	14.0
3 to 5 years	136	9 40	11 81	25 6
Over 5 years	88	7 81	12 72	62.9
Totals	757	$9 52	$11 07	12.1
Grand totals	1,408	$7 12	$9 47	33.0
Oakland—				
Under 18 years:				
Less than 1 year	116	$4 70	$4 78	2.0
1 year to 3 years	46	6 00	6 26	4 5
Totals	162	$5 06	$5 20	3.0
18 to 25 years:				
Less than 1 year	184	$7 01	$7 32	4.4
1 and 2 years	87	7 04	8 24	17.7
3 to 5 years	33	7 40	10 30	39.2
Over 5 years	17	5 47	10 23	87.0
Totals	321	$6 96	$8 03	15.4

TABLE II—Continued.

Locality, age and length of service	Number of employees	Average salary per week		Per cent of increase
		Initial	Present	
Over 25 years:				
Less than 1 year	115	$9 63	$9 79	1.7
1 and 2 years	102	10 10	11 17	10.6
3 to 5 years	33	9 88	11 54	16.8
Over 5 years	48	7 13	12 46	74.7
Totals	298	$9 41	$10 82	15.0
Grand totals	781	$7 50	$8 53	13.7
San Jose, Sacramento, Stockton and San Diego—				
Under 18 years:				
Less than 1 year	58	$4 69	$5 19	10.7
1 year to 3 years	13	4 15	7 00	68.7
Totals	71	$4 59	$5 52	20.3
18 to 25 years:				
Less than 1 year	102	$6 59	$7 22	9.6
1 and 2 years	60	7 00	8 90	27.1
3 to 5 years	19	5 58	9 58	71.7
Over 5 years	3	5 33	12 00	125.1
Totals	184	$6 60	$8 09	22.6
Over 25 years:				
Less than 1 year	78	$9 71	$10 01	6.2
1 and 2 years	62	9 70	11 11	14.5
3 to 5 years	29	8 59	11 86	38.1
Over 5 years	37	9 22	13 73	48.9
Totals	206	$9 45	$11 38	20.4
Grand totals	461	$7 57	$9 16	21.0
Country towns—				
Under 18 years:				
Less than 1 year	26	$6 23	$6 54	5.0
1 year to 3 years	2	3 50	7 50	114.0
Totals	28	$6 04	$6 61	9.4
18 to 25 years:				
Less than 1 year	77	$7 78	$8 38	7.7
1 and 2 years	64	7 19	9 06	26.0
3 to 5 years	26	7 62	10 62	39.4
Over 5 years	16	6 56	12 44	89.6
Totals	183	$7 15	$9 29	30.0
Over 25 years:				
Less than 1 year	50	$10 08	$10 54	4.5
1 and 2 years	46	10 24	11 35	10.8
3 to 5 years	30	10 00	12 00	20.0
Over 5 years	28	8 46	12 64	49.4
Totals	154	$9 81	$11 45	16.7
Grand totals	365	$8 19	$10 00	22.1

OUTLINE OF A POLICY CONCERNING "LEARNERS" IN INDUSTRY,

SUBMITTED TO THE

INDUSTRIAL WELFARE COMMISSION OF CALIFORNIA

By MEYER BLOOMFIELD,

Director of the Vocation Bureau of Boston; Special Professor of Vocational Guidance,
Boston University.

On August 14, 1915, Professor Meyer Bloomfield of Boston was retained by the commission to study the California situation in regard to the learners in industry. Mr. Bloomfield spoke before employers' associations and the central labor bodies of San Francisco and Los Angeles endeavoring to interest them in the formation of employment managers' associations and vocational training in the public schools. Mr. Bloomfield's study was supplemented by the following suggestions:

''The matter of regulating the conditions and wages of learners or beginners in industry, that is, the problem of employing those who, employers claim, are for the time being a liability instead of an asset on the pay roll, is peculiarly difficult, chiefly for one reason:

Few establishments have any standardized or systematic teaching program or procedure.

''Learning'' may mean much in one place and absolutely nothing in another. The size of the plant is not material. In a big factory there may be a system of initiating the beginner into the trade. On the other hand, the small place may have no such system and yet afford real and speedy opportunity to learn because of the facility with which all processes may be observed, and perhaps the greater freedom of intercourse and initial help among employees.

A fundamental obstacle to clear thinking on this question by the average employer is his having in mind, when discussing the matter of the learner, some fixed picture of the learner. The employer regards the problem of the learner as purely individual. ''It all depends on the brightness, etc., of the employee,'' he says; hence he can not see any impersonal way to fix a beginner's wage. That is, he regards the whole learning operation as something which varies only with the capacity of the learner.

It is submitted that such course of thinking is based on a fundamental error, although it contains a half-truth. The stress on the individual phase of the problem is misleading, besides being unjust, because it assumes equalized conditions and instruction opportunities in industry.

As there are no such standardized conditions in many industries, no one can tell how much of a learner's progress in the direction of earning an established wage depends on individual capacity and how much on quite objective and impersonal factors, such as systems of teaching, provisions for a round of shop observations and experiences, careful selection of applicants, etc.

The fact that a slow or unpromising learner in one plant shows by change to another plant ability not before revealed is proof that something more than the learner's ability frequently determines advancement in an organization. The point here made is that the problem of the learner must be looked upon primarily as a problem of industrial management and organization; the nature of the conditions to be imposed by the commission may be well founded on objective standards and considerations, such as the following questions suggest:

> Has the employer any system of careful selection of employees?
>
> Is there any organized opportunity for learning the trade?
>
> What is the actual cost to the employer of teaching an employee?
>
> What method is used to determine the learner's progress in order not to delay the payment of earned wages?
>
> *Is it cheaper to carry an indefinite number of learners who come and go than to plan permanence for rapid advancement of the learning force?*

Every trade employing learners or beginners at a wage below the prescribed minimum is *obliged to prove its right to exemption as regards below-the-minimum employees,* and the nature of the proof can be found only in the nature of the actual teaching opportunities provided.

Now, the existence of such opportunities can be determined only by careful definition as to what a learning opportunity consists of and an investigation of its results. Definition and investigation are essential in order that there may be no vagueness in considering this problem.

To arrive at a basis of definition, the scope of this report may be described: The present report does not go into the question of apprenticeship which is usually taken care of by law, contracts, and by rules of organized labor. In other words, the present report deals with methods of regulating the employment of beginners or learners in places of employment and in industries where no established procedure is otherwise provided for.

Section 8 of the act establishing the Industrial Welfare Commission authorizes the commission to determine wages and conditions for

Minors;
Learners;
Apprentices.

Paragraph (*b*) of section 8 is not clear as to whether learner and apprentice are used as synonymous terms. But both the Civil Code and the Penal Code of California deal with the law concerning apprentices and indentures for same. As contract, and oftentimes union regulations, govern this class of workers, it might be well to class as learners all those beginners who are not otherwise covered by regulations. This designation should hold even where employers loosely use the term apprentice.

The present report, then, will deal with the learner or beginner in industry; the adult rather than the minor.

We have, then,

the minor-learner;
the adult-learner.

A further definition is needed as to the experienced and inexperienced beginners.

We need provision for

inexperienced minor-learners;
experienced minor-learners;
experienced adult-learners;
inexperienced adult-learners.

Minors under eighteen who have worked for one year at work similar to that they now engage in should not be regarded as inexperienced.

A similar provision should control the ruling with respect to those over eighteen. In other words, one year's work experience in an industry like or nearly like the one to which a minimum wage is to be applied should take the employee out from the learner class.

We have finally to consider the factors which go to make the "learner" as distinguished from the regular operative entitled to the minimum wage.

Vocational surveys have shown that as a rule the employer has been too vague in his methods of initiating a beginner. "Learning a trade" has meant everything from running errands, sweeping the floor, caring for stock, looking on, carrying on the technical operations along with other workers, or receiving definite instructions according to a clearly-defined schedule.

As shop conditions and methods vary so widely as to make it impossible to rule fairly with general provisions applicable to large and small employers, efficient and inefficient alike, a teaching policy can be framed and a definition of opportunity can be formulated and a sliding scale of compensation varying with the nature of the opportunity can be devised only through an analysis of actually existing provisions with regard to learners.

In other words the task is to discover—

What is the actual learning procedure in the shops?
What is a genuine learning opportunity?

and to establish a less-than-minimum wage based on the opportunity or lack of it; that is, the better the opportunity in a given place the smaller the wage, the poorer the opportunity, the smaller the exemption from the regular minimum.

To put a premium on learning opportunity after defining for all employers what such opportunity involves, and to penalize lack of opportunity is to raise the standard of shop management, equalize conditions, and thus advance the best interests of both employer and employee alike.

In order to arrive at a definition of learning opportunity, a schedule should be printed to be filled out by employers and workers or by the commission's investigators.

The following schedules are suggested:

Employer's schedule.

Name and address of the industry.
Total number of employees per month during the year by age and sex groups.
How many are classed as learners, age, sex; and wages of each from time of start to date?
How were these learners secured? Advertisements, schools, etc.?
What is the source of supply for learners? What qualities required?
What previous school training would help the beginner?
What school training or educational opportunity now existing would help?
What new educational provisions would help?
On what is the wage of the learner based? Give items.
What are the specific provisions for teaching the learner: Give the sequence of operations and daily schedule of first week, second, etc., to date?
Who supervises the teaching?
Show in detail what the supervisor does. How much time each day is this supervision given? Who does the actual work of instruction? How? When?
How is proficiency recognized?
What are the requirements in proficient work?
What provisions are there for advancing the learner to worker?
How frequently are learners advanced?
How many are advanced each week, month or year?
Who decides this?
What provision is made to safeguard the speedy advancement of the competent learner?
What provision is there to reduce the time in learning?
What difference is there between the tasks the learner is set to do and the regular workers?
Are there any printed instructions or other organized help to learners?
What difference is there in the tasks given to an experienced beginner and the inexperienced learner?
What are some of the common deficiencies observed in the learner?
What suggestions have you for securing more competent applicants?
What could you do to shorten the learning period?
How many learners are discharged?
Give record and reasons for each case during the year.

Who decides on discharge?
Names and addresses of discharged learners.
Names and addresses of learners who have left the place within the year.

Schedule for "learners."

Name, age, address, nationality.
Can you read, write, speak English?
How long have you lived in the city or state?
Previous residence.
Education.
Do you go to evening or other school?
Are you carrying on any outside study?
Previous employments and employers.
Previous wages.
How long in the present position?
Give daily schedule of what you do. First day, second, etc., as far as possible to date.
Give operations in detail with time schedule.
Do you receive any instruction? When? What kind?
Is there any systematic supervision of your work and training?
Who helps you most?
What help do other employees give you?
How long will it take before you think you will be a proficient worker?
What hinders your making rapid progress as a learner?
What help in the shop, or in an evening school would enable you to advance faster?
Have you asked to be advanced? With what result?

Schedule for a picked group of workers who have been learners.

Name, etc.
How did you learn your trade?
Who taught you?
How were you taught?
How long the time?
Could the time have been shortened?
How?
What suggestions have you for the right instruction of learners?
How determine the learner's proficiency?
How would you start to learn if you could begin again?

Schedules from employer and employee thus collected and finally analyzed would for the first time probably give a correct picture of the teaching process, whatever it may be, in the industries. The commission could from these determine the content of such instruction and a time element in connection with it. The employer would be made responsible for results so far as he has responsibility, and the employee would have a definite standard to measure by.

The best employers would not be much affected by a ruling, while the backward ones would have a definite incentive either to come up to some standard of instruction or cease exploiting workers under guise of carrying them as learners.

In order to help industry, and this is more the concern of the employer than of the commission, an organization is necessary on the part of all who engage help in order to work out, among other things, a fair standard of teaching opportunity. For this reason an employment managers' association is necessary. The newly formed Society for the Study of Employment Problems in San Francisco is an example. Such society would make constant study of the problems concerning the selection, training, payment, promotion, supervision, transfer, and turn over of its working force. The more such society knows about the problems of the personnel in factories and stores, the more it helps to work out right standards of management and treatment, the easier will it be for state and public to legislate in the light of facts.''

EMPLOYMENT OF WOMEN AND MINORS IN THE GARMENT TRADES OF CALIFORNIA.

BY BERTHA VON DER NIENBURG.

PREFACE.

The garment industry is one of the most completely organized industries employing women in California. It was from this industry that most, if not all, of the opposition to minimum wage legislation developed while it was pending in the legislature. Because of the apparently sincere fear expressed by the women in the trade, the commission has had the most complete and authoritative investigation made of any industry thus far undertaken.

The industry, that is the shirt and overall trade, is about 60 per cent organized. Conferences were held in San Francisco and Los Angeles in 1914 and again in 1915 with both employers and representatives of the union, when the commission secured the expert services of Bertha von der Nienburg, formerly special agent of the United States Bureau of Labor Statistics and now with the Bureau of Applied Economics of Washington and Philadelphia. Miss von der Nienburg's report follows in full.

INTRODUCTION.

The greater part of the ready-made clothing worn by the men, women and children of California is made in Eastern or Middle-Western cities. The momentum gotten by an early start, proximity to the sources of raw material, a labor supply adapted to manufacturing enterprises, an abundance of capital and convenient transportation facilities—all have combined to make New York, Chicago, Philadelphia and Baltimore the centers which clothe the Pacific as well as the Atlantic coast. Particular needs or particular advantages, however, have operated to develop some garment manufacture in California. Working garments for men such as overalls, jumpers, coats and aprons, made in San Francisco and Los Angeles, have found a favorable market not only throughout the state but in all states west of the Rockies. Medium grade shirts are also manufactured extensively. A custom trade in suits both for men and women is carried on in the larger cities. For the rest, with the exception of a few establishments, garment manufacture in California is for the most part a fill-in business. The distance of the local retailing markets from the main sources of supply calls into being a number of small establishments which make particular kinds or sizes of garments at order for the retailer when his stock of such models or sizes is low and his trade will not wait for delayed Eastern delivery. Shops making all sorts of men's clothing and furnishings and women's and children's outer and under garments are, therefore, found in the two largest cities. While each small manufacturer strives to create a larger and more stable market for his goods, few have as yet met with success.

Combined, the garment trades give employment to more women than any other branch of manufacture in the state save the canning industry. At the completion of the commission's investigation of the canneries, this study of conditions surrounding the 3,000 women wage-earners in clothing factories was undertaken. Time did not permit of a thorough investigation into each small branch of the trades; the attention had to be centered upon three lines, shirts and workingmen's garments, ladies' cloaks, suits and skirts, and men's custom tailoring, each representing a phase of the garment situation in the state.

As the hours of labor of women employed in this trade had been limited to eight per day and forty-eight per week by the general statute of 1911 covering all manufacturing establishments save canneries, and as matters of ventilation, water supply and toilet rooms were covered by rulings of the local boards of health, consideration of the subjects of hours and sanitation was only necessary in this study in so far as they revealed angles peculiar to the garment industry. The emphasis of the investigation was placed upon the rates of pay and the earnings of the women and children employed. Figures were obtained, wherever available, on the time required for beginners to become ''experienced.'' Consideration was also given to the competitive problems of the employer.

As the mass of women working on shirts, overalls and kindred garments are paid on a piece rate basis, it was necessary to time the operations on the several parts of each impertant style of garment, in order to obtain accurate information as to the yielding power of the existing piece rates. Records of the time lost by operators while waiting for work or for other causes for which they were not personally responsible indicated to what extent the earnings of these employees fell short of the yielding power of their piece rates. The majority of women working on ladies' cloaks, suits and skirts and on men's suits and coats are paid on a time basis. A transcript of the pay roll for the year revealed, therefore, their rates of pay and their earnings while employed, as well as the seasonal nature of the employment.

With this body of facts before it, the commission is enabled to judge to what extent the earnings of the women employed in these branches of the garment industry are sufficient to meet the demands of healthful living, what the causes of any deficiencies are, and whether such causes can be removed, without jeopardizing the welfare of the majority of women employees.

THE EMPLOYMENT OF WOMEN AND CHILDREN IN SHIRT, OVERALLS AND KINDRED MANUFACTURES IN CALIFORNIA.

THE CHARACTER OF THE INDUSTRY.

In November, 1915, there were eighteen establishments engaged in the manufacture of shirts, men's underwear and pajamas, overalls and other working garments and children's rompers and nighties, for the wholesale trade. All were included in the investigation together with six custom shirt makers. They gave employment to 1,781 women, exclusive of the office, lunch room and janitress service. The largest number of firms (12 wholesale and 6 custom houses)—employing also the largest group of women—were engaged in the manufacture of shirts, pajamas and similar garments. Seven firms, five of whom are also included among the shirt manufacturers, made overalls, pants and other workingmen's garments. The number making men's aprons and waiters' goods exclusively were four and they employed only 36 women; some of the overalls houses did a small business in this line, however. While the number of articles manufactured was numerous, shirts and overalls formed the bulk of the product.

These firms manufacture medium grade work shirts, negligee and golf shirts. A few cheap work shirts and a considerable amount of high grade negligee and golf shirts are also made. Seven of the 12 wholesale manufacturers buy their 50 cent work shirts in New York and Baltimore.[1] The dress shirts are purchased from Troy or Albany manufacturers and many silk shirts are bought in New York and Pennsylvania. All kinds and grades of overalls, jumpers, coats and blouses are made in this state; manufacturers do not purchase any part of this stock. The California product is marketed extensively throughout this state, Arizona, Nevada, New Mexico, Utah and Oregon. Some firms sell in Texas, Colorado, Wyoming, Montana, Idaho and Washington. The field for California shirts and workingmen's garments in the United States proper is, therefore, limited to the territory west of the Rockies. Goods are sent, however, to Alaska, Mexico, the Hawaiian Islands, and to South America and South Africa.

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[1] One firm buys from the Chinese manufacturers in San Francisco.

TABLE I.

Number of Establishments, Number of Time and Piece Workers Engaged in the Manufacture of Shirts, Overalls and Waiters' Goods in California, and Number Affected by Union Regulation.

Articles manufactured	Number establishments	Women employed			Per cent affected by union regulation	
		Piece workers	Time workers	Total	Establishments	Women employees
Shirts, pajamas, drawers, etc.	18	824	141	965	38.9	62.3
Overalls, coats, pants, etc.	7	709	71	780	71.4	59.2
Waiters' goods, aprons, etc.	4	29	7	36	50.0	70.0
Totals	[1]24	1,562	219	1,781	[2]41.7	61.1

[1] Five firms manufacture shirts and overalls.
[2] Four union firms manufacture shirts and overalls.

COMPETITION WITH MANUFACTURERS IN OTHER STATES.

All of this field is covered by Eastern and in part by Middle-Western manufacturers and firms holding prison contracts. The cotton shirting and overall denim used in California is obtained either through New York brokers or direct from mills in Massachusetts, Rhode Island, North Carolina and Georgia. A small part of the flannel used in shirts is bought in Portland and some of the silk in the Orient. For the most part, however, the New York freight rates must be paid on raw material for garments made here. On shirts there is the difference between $1.35 and $2.20 in the freight rates per 100 pounds on the raw material and on the finished garment. The freight rate on overalls when manufactured is $2.00 per 100 pounds for less than a carload; on the denim cloth it is $0.90 per 100 pounds for a carload and $1.35 for less than a carload. These differences in rates furnish some protection to the California manufacturers from outside competition.

In shirts, the heaviest competition is from New York State. According to the latest figures obtainable,[2] there were 22,205 women employed in the manufacture of men's shirts, collars, and white goods in New York in 1913. In New York City, the contract system, in which the wholesaler gives out his cut materials to a contractor to make up, is prevalent. The contractor, generally acting as his own superintendent or foreman, can produce more cheaply than the regular manufacturer. According to the report of the New York Factory Investigating Commission of 1913, contractors charge from $0.65 to $0.85 to make up completely a dozen garments selling at wholesale at from $3.00 to $3.50 per dozen. California manufacturers assert that they can not produce a shirt at this price; some prefer, therefore, to buy this grade from the New York wholesaler.

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[2] Industrial Directory of New York State.

A shirt retailing for $1.00 cost three regular factories in New York State $1.12, $1.30, and $1.42 per dozen for making and examining; a similar shirt cost a Missouri firm $1.15; whereas four California manufacturers paid from $1.72 to $2.05 for labor on this type of shirt. The total manufacturing costs did not vary in the same degree. The New York firms total costs were $6.62, $6.35, and $6.65, while in California the cost ranged from $6.65 to $7.55 and averaged $6.94 per dozen. There was no way of ascertaining how representative the figures from these three New York firms were of the cost of production in that state.

Similar cost figures could not be obtained from Maryland, Indiana, Ohio and Nebraska, the other competing states mentioned by local men. Comparison, however, of pay rolls of representative weeks show that the woman labor cost in the first two states is less than in California. The average weekly earnings of 2,320 piece workers in a Baltimore factory in 1915 was $6.70. In South Bend, Indiana, the earnings of 696 women working on medium and high grade shirts and underwear averaged $6.44.[3] In California the average earnings on shirts and overalls during a week in 1914 (a very poor year) were $8.63. Without a knowledge of the number of hours of employment represented in any case, an exact comparison can not be made, but the wide disparity of the figures strongly indicates differences in rates.

In overalls and other workingmen's garments the largest competitors are located in Detroit and Cincinnati. The rates for operating (not including buttonholes, barring and riveting) on an engineer's overalls in a Detroit factory totalled $1.15 per dozen.[4] For practically the same work in California the rates totalled $1.30. Cincinnati rates are not known.

Both shirts and overalls are made by Chinese in the San Francisco Chinatown. According to the San Francisco manufacturers, who would be affected, this competition is rapidly decreasing because of the exclusion law. It is not considered formidable at the present time.

In addition to legitimate competition, California manufacturers have to contend with the product of the penitentiaries.

COMPETITION WITH PRISON MADE GOODS.

In 1915, 20 penal institutions in 14 states were known to have contracts for the manufacture of men's working shirts, overalls, pants, jumpers and similar working garments. These contracts provide that the contracting firms shall supply all materials used in the manufacture of garments, shall employ the labor of a certain number of convicts and shall pay for such labor at a specified rate per head or at a rate per dozen garments made. The state or county furnishes, free of rent, the floor space for manufacturing, the light, heat and water and frequently the power and steam necessary for running the plant and laundry. In some instances the state also furnishes "such tables, benches, tools, machinery shafting and belts as may be necessary" and "agrees to convey the raw material used under the agreement from the railroad station of the town of ____________ to said prison and to return the manufactured product thereto ____________ free of expense to the party of the second part."[5] The state often guarantees the goods against theft while in its possession and agrees to protect the contractor against unnecessary waste in the cutting of material, and to pay him the actual cost of the material when garments are damaged beyond repair in the process of manufacture. The state sometimes pays the wages of a superintendent chosen by the contracting firms; it always maintains a guard in the factory to keep order and see that the set task is done.

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[3] Page 164, "Hours, Earnings and Conditions of Labor of Women in Indiana Mercantile and Garment Factories," United States Bureau of Labor Statistics, Bulletin 160.

[4] Page 388, Report of the Michigan Commission of Inquiry, 1915.

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[5] Quoted from contract between state of ______________ and __________________ Manufacturing Company.

TABLE II.

Penal Institutions in which Men's Shirts, Overalls and Other Working Garments were made under the Contract System in 1915. (a)

State and institution	Contracting firm	Goods made	Number of persons employed	Rate paid for labor: Per person (daily) (cents)	Rate paid for labor: Per dozen garments (cents)
Connecticut—					
State Prison at Wetherfield	Sterling Mfg. Co.	Shirts	130	---------	.34
Delaware—					
New Castle County Workhouse	(b)	Men's and boys' pants	150	(b)	---------
Kentucky—					
Penitentiary at Eddyville	Reliance Mfg. Co.	Shirts	(b)	---------	(b)
Reformatory at Frankfort	Reliance Mfg. Co.	Shirts	(b)	---------	(b)
Maryland—					
State Prison at Baltimore	Oppenheim, Oberndorf & Co.	Shirts	505	$0 50	---------
St. Mary's Indust. School for Boys, Cheltenham	McCawley & Co.	Shirts	100	21	---------
House of Correction at Jessup	Sam'l Valentine & Co.	Shirts	200	45	---------
Maryland Indust. School for Girls, Baltimore	Standard Overall Co.	Shirts	35	(b)	---------
Indust. School for Colored Girls	Standard Overall Co.	Shirts	50	(b)	---------
House of the Good Shepherd	McCawley & Co.	Shirts	40	---------	.30 to .35
	Oppenheim, Oberndorf & Co.	and Aprons	30	---------	.27 to .30
	Standard Overall Co.	Overalls	40	---------	.28 to .40
	McCawley & Co.	and Jumpers	40	---------	.25 to .60
Michigan—					
State House of Correction, Marquette	Reliance Mfg. Co.	Overalls	(b)	(b)	---------
Missouri—					
State Prison at Jefferson City	D. M. Oberman	Shirts, overalls, jumpers, etc.	(b)	men .70 wom. .50	--------- ---------
New Jersey—					
State Prison at Trenton	Crescent Garment Co.	Shirts and women's underwear	(b)	---------	(b)
Rhode Island—					
State Prison and Providence County jail, Howard	Crescent Garment Co.	Shirts	301	---------	(b)
South Dakota—					
State Prison, Sioux Falls	Reliance Mfg. Co.	Shirts	75	(b)	---------
Tennessee—					
State Prison, Nashville	(b)	Pants	40	(b)	---------
Vermont—					
State Prison, Windsor	Reliance Mfg. Co.	Shirts	140	(b)	---------
Virginia—					
State Prison, Richmond	Star Clothing Co.	Shirts, pants, coats	(b)	(b)	---------
West Virginia—					
State Prison, at Moundeville	Kraft Mfg. Co.	Pants, shirts Women's skirts	360 200	--------- (b)	--------- ---------
Wisconsin—					
State Prison, Waupun	Reliance Mfg. Co.	Overalls	90	(b)	---------

(a) Information secured through state bureaus of information, the United Garment Workers of America, and from Senate Document No. 494, "Laws relating to convict labor."

(b) Not reported.

These contracts are made for a period of from two to ten years, with the privilege of a further renewal. Some specify that during the continuance of the contract the state shall not hire to other contractors the labor of any convicts for the purpose of manufacturing articles similar to those made by the contracting party.

The rates per dozen shirts paid by the contracting firms (where this information was obtainable) vary from $0.27 to $0.35. This includes the cost of cutting, sewing, pressing and putting up for shipment. In California the cheapest shirts made cost $1.01 for sewing and examining alone. The highest prison rates per dozen overalls reported is $0.60. The lowest rates paid in California for sewing any kind of overall is $1.00. With these marked differences in the cost of making the garment, the employer of free labor who is paying for floor space, power, light, heat, machines, and supervisory salaries can not compete with the prison contractor. Only the limited output from this source makes it possible for the employer of free labor to exist. The 14 penal institutions reporting on numbers employed approximately 2,526 people in the manufacture of garments. As the five institutions about which this information was not obtained can not have employed as many, the total number of people employed in such manufacture would not exceed 5,000. Yet manufacturers in many states claim that the production from this number affects the prices and sales of the entire product. The prison made goods must be sold up for the season before the legitimate manufacturer can place his product. This competition is made more powerful because single contractors under different firm names sometimes control the product of prisons in several states. As most of the prison contractors also operate free shops, their low priced prison-made garments serve as a leader to secure the placement of orders for lines manufactured in their free labor factories.

Prison-made goods enter the market under many different jobbers' or retailers' labels. It is therefore very hard to find out just how much enters a particular state. The policy observed by contractors of selling these goods outside of the state in which they are manufactured tends to make for a wide distribution. It is definitely known that prison-made goods are entering the San Francisco and Los Angeles markets from a firm holding six state contracts, and from the Baltimore and Missouri penitentiaries.

While the union label acts as an aid in marketing overalls, employers using it say it is of negligible value on a shirt. No one knows whether a man does or does not wear a union-made shirt; the housewife who must make each penny tell, will not generally pay extra to have a union label on a shirt.

For several reasons, therefore—the difference in freght rates on the finished garment and the raw material, less extended free competition, rates of pay more nearly approaching Middle Western manufacturers' rates, less prison competition, and the value of the union label—competition in the overall branch of manufacture would not seem to be as severe as in shirts.

METHOD OF ASCERTAINING EARNING VALUE OF EXISTING PIECE RATES.

The piece rate system is prevalent in California shirt and overalls factories as in all similar factories in other states. Seven-eighths of the 1,781 women employed here were paid after this manner. Most of these women were machine operators. Supervisory positions, inspecting the garments for flaws, pressing and boxing the finished goods are the principal time-work occupations, although the last two, and even inspecting, are sometimes paid by the piece.

One thousand and eighty-eight (1,088) women employed in 10 out of 18 firms engaged by the wholesale manufacture of these articles were unionized. Their piece rates and minimum time rates of pay are therefore regulated by union officials. Once a year the stock of each firm is gone over by an official of the union and the factory superintendent, and an agreement of rates on all parts of every garment is made for the next year. Any new garment introduced during that year is submitted to the official of the union for price fixing.

In the unorganized factories the employers generally determine the correctness of prices on new garments by comparing the money made on them with tentative rates with the past average earnings of an experienced worker. If she has not earned an equal amount on the new garment at the rate set, this rate is raised.

In order to ascertain the yielding power of prevailing rates of pay, whether union or nonunion, it was essential to know what the output of operators was on the several parts of the garments. Short tests made on picked operators for the purpose of determining the number of solid minutes or hours it would take to make the parts of the garments would not have accomplished the purpose. Only work done under everyday surroundings by many operators would show the real earning power of the rates. Employers and employees agreed to keep records of the time taken to make all bundles given out over a period of from one week to one month, the length of time depending upon the variation in kinds of garments made. The records were kept so that the work done, the material and thread used, the machine operated, the size of each bundle, the rate paid per dozen or per hundred and the time taken to make each bundle, were given. In four establishments the records were kept by a forelady or desk girl; in six by the girls themselves, while in three, separate records were kept by a representative of the firm and by the girls also. In the six cases where records were kept by the employees only, these were sent in as representative of the firm's work by the superintendents because they had found that under their organization the girls could keep records more accurately than their own agents. Where records were kept by both employer and employee, no marked discrepancies occurred.

The period over which the work was timed was a normal one for all but two small shirt factories. These were running slack; their operators therefore sometimes worked more slowly than they would, had there been an abundance of work. As they were employing only a few women in these weeks, the lower output did not affect the figures as a whole.

The differences in the processes involved in making shirts, overalls and kindred garments necessitates a separate discussion of the work, the piece rates paid and the resulting earning power of operators.

PROCESSES INVOLVED IN MAKING SHIRTS.

As each firm aims at marketable individuality in its shirts, the methods of making shirts and the styles made are innumerable. All California wholesale manufacturers used the "string system" of work, that is, each operator makes a part of the garment at a time, no one making a complete garment. Just what constitutes a "part" varies under different organizations; sometimes it may mean a single operation; sometimes the complete making of a shirt-front or other division. In small factories, girls are put on a number of parts, because there is not enough work to keep each girl on a part. In general, the processes involved in shirt making are as follows:

Several dozen shirts are cut out by men cutters. The parts are labeled and tied in bundles, ready for the sewing rooms. All operators are women. They either take their particular work from bins under the forewoman's supervision or have it brought to them. On the buttonhole side of the shirt-front, a hem, facing or box plait is formed and stitched. The button-stand, or piece on which the buttons are sewed, is hemmed or faced. These two pieces of the shirt-front go to the "front hand," who finishes the rough edges of the box plait, makes and puts on the pockets, and if it is a union-shop, stitches the union label at the end of the button-stand. A yoke has been stitched to the back of the shirt. The back and the two front pieces go to a "joiner" who joins the shoulders. Other operators have made the collars and stitched them to the bands. The finished collars are put on the shirt body by the "collar-on" girl. The sleeves have been pieced by setting a gusset under the arm. The sleeve openings at the cuff have been hemmed or faced and finished, the cuffs have been made and stitched to the sleeve. The open sleeves are then joined to the body of the shirt on a machine which folds under the raw edges as it stitches. The sleeves and body of the shirt are closed by the "feller." The tails or bottom of the shirt are hemmed. The size tickets are sewed on by the collar maker or yoke hand or by special girls. On medium and high grade shirts, a girl marks the places for buttons and buttonholes. These are sewed on and made by machine. The shirt is then ready to be inspected for flaws. If perfect, it is pressed, buttoned up, folded and boxed ready for shipment.

EARNING POWER OF PIECEWORK OPERATORS.

When employers were asked what an average operator in their factories ought to earn, the prevailing amount given was $0.25 an hour. The lowest sum stated was $0.20 an hour. In order that there might be a common basis for judging the widely varying production and rates on the several parts of the shirt, the $0.20 figure was used as the pivot about which to revolve the earning possibilities.

Careful examination of the figures in the tables following shows that the earning power can not be discussed for pieceworkers as a whole, but must be considered in relation to the work done. There are certain processes on which the rates of pay are uniformly such that all operators can earn well above $0.20 an hour. These are hemming and running on the box plait. There are other processes on which *almost* all operators can make more than $0.20 an hour. These are felling, sleeving, sleeve piecing, joining, running on the button-stand, making buttonholes, sewing on buttons and pressing. There are other operations on which one or two firms' records show a high earning power for all operators, but on which a large number of individuals in the majority of firms did not earn $0.20 an hour on most of the work done. These parts are fronts, yokes, cuffs and sleeve openings, collars made and on, and marking and buttoning up.

The importance of this fact will be realized when the number usually employed at each of the above occupations is considered. Table III shows that out of 656 who were employed steadily on one part of the garment, 396, or 60 per cent, were working on fronts, cuffs and sleeves openings or making and putting on collars.

TABLE III.

Number and Per Cent of Pieceworkers Employed on Each Part or Process in the Manufacture of Shirts in Twelve Establishments.

Part or process	Number of women employed	Per cent
Fronts	125	15.9
Box plait and buttonstand	22	2.8
Collar made and on	135	17.2
Cuffs made and on, sleeve openings finished	136	17.3
Yokes and joining	45	5.7
Sleeve piecing	12	1.5
Sleeving	23	2.9
Felling	26	3.3
Hemming	25	3.2
Buttonholes	38	4.8
Button sewing	25	3.2
Buttoning up	4	0.5
Marking	8	1.0
Examining	7	0.9
Pressing	25	3.2
Single needle machine operating (not classified)	102	13.0
Union Special machine operating (not classified)	28	3.6
Totals	786	100.0

Wide disparities in output and rates on the same work exists in these occupations in the eleven establishments. Sometimes the firm having the highest output will also pay the highest rates per dozen garments; sometimes the firm having the lowest output will pay the lowest rates. Again, a factory with a high production may pay low rates and yet its operators will have an earning power greater than another factory paying high rates but whose operators have a low output, comparatively speaking. If a rate per dozen garments were fixed that would insure the average operator in each establishment any given amount, some firms whose operators already earn that amount with a lower rate would have to increase their rate, even though it was satisfactory in their particular factories, unless such piece rates were combined with an alternative of minimum hourly rates.

FACTORS AFFECTING PRODUCTION.

The output of operators on each process will fall or rise with several variants. The amount of work on some parts of the garments, and especially those with the lower wage yielding power, may be doubled or trebled on different style shirts. The unit used to measure this factor in this report has been the row of stitching. On processes where the stitching is considerable (such as felling), the length of the seam will make a difference in the time taken to run it. The organization in the several shops may greatly aid or handicap the operators' output; if, for example, she must fetch and carry her bundles and match her parts, she will have less time to spend at the machine than if her work is heaped up beside her. Then, it is much easier to handle some material than others, a firm piece of cotton shirting being the easiest to sew. Similarly, a good cotton thread will run through the machine more smoothly than either a mercerized or a silk thread. Where the stitching itself takes longer than stopping to adjust materials, the number of stitches a machine must make per inch and the speed of the machine will be important factors in changing the output. Different machines have better tension and greater speed. If a girl is given bundles containing two dozen on one day and four dozen on another, she will have to untie and tie up twice as many bundles in the first day; if she gets her own bundles, she will have to do twice the walking and waiting. If the bundles contain several colors, she may have to change her thread several times in the course of making one bundle. And lastly, the skill of operators varies extensively.

Employers and union officials have taken some of these factors into consideration in fixing their rates. All firms vary rates with the amount of work required, the thread used and the quality of materials. Some make distinctions between cotton and flannel and the number of stitches to the inch. One firm pays extra if the bundles have been small in size; another pays for changing thread. One firm is known to take the skill of the operator into consideration, that is, pay less to a noticeably fast operator than to the mediumly skilled worker.

The effect of each of the above factors can not always be measured, because several may vary at the same time. The figures obtained from the time records indicate the effects of changing amounts of work, materials, thread, stitches per inch and size of bundles on certain styles of shirts.

VARIATIONS IN OUTPUT ON DIFFERENT KINDS OF WORK.

In discussing the changes in productivity on different kinds of work, the figures for cotton materials sewed with cotton thread are used, except in a few cases which are noted (where an important process was timed on flannel only). Each part or process is discussed separately.

BOX PLAIT.

The buttonhole side of the shirt-front is often finished with a box plait. The material forming the plait may be cut on the shirt and be reinforced with a facing, or it may be a separate piece formed and stitched on with a facing to the shirt proper. In either case, a Union Special multiple needle machine is used, the machine having an edge folding attachment, which folds both sides of the two pieces of material as it stitches. Sometimes the machine is equipped with four needles and sometimes with two, the only difference in the work as far as the operator is concerned being that four needles are harder to watch than two. If the material is striped, the operator must see that the stripe is fed straight into the machine. Box plaits vary in length, usually extending, however, two-thirds down the shirt-front or the entire length of the shirt.

On a two-thirds length box plait, the hourly output per operator was approximately 47 per cent less on striped material than on a solid color, the average output on the first being 6.1 dozen, the second, 11.4 dozen per hour. The rates on plain material are $0.025 and $0.035 per dozen; on striped, $0.04 and $0.045.

The difference in output on a two-thirds length cotton box plait and a full length cotton box plait, based on the making of more than 1,000 dozen each, is the difference between 9½ dozen and 6 dozen, or 37 per cent less can be done per hour of the full length box plait. The rates on the two-thirds plait are $0.04 and $0.045 and on the full plait $0.06 and $0.065.

The difference in output both between striped and plain color material, and two-thirds and full length box plaits have therefore been very closely approximated in the existing difference in rates. Two and one-half cents on a two-thirds length box plait and $0.045 on a full length box plait of solid color material, and $0.04 and $0.06 on striped material were rates sufficient to produce earnings in excess of 20 cents per hour for all box plait operators.

TABLE IV.

Average Output and Earnings per Hour of Pieceworkers on Shirts.

Process—Running on Box Plait.

Work done	Material	Establishment	Number records included	Machine used	Total dozen made	Average output per hour (doz.)	Number having higher output than the average	Number having lower output than the average	Rate per dozen, cents	Average earnings per hour, cents
⅔ box plait run on	Cotton (white, plain colors and stripes).	A	2	Union Spl. 2 and 4-needle	617-5	7.4	1	1	.035, .04, .045[1]	.164 to .297
		B	3	Union Spl. 4-needle	244-2	11.26	1	2	.025, .04	.394 to .334
		C	1	Union Spl. 4-needle	55	7.86			.045	.354
		G	1	Union Spl. 2-needle	631-7	12.3			.025	.31
	Totals		7		1,548-2	9.5	3	4	2½ to 4½	.237 to .427
	Mercerized cotton, Merc. thread used.	C	1	Union Spl. 4-needle	45	8.2			.0475	.389
		G	1	Union Spl. 2-needle	60	6.3			.04	.252
	Totals		2		105	7	1	1	.04 to .0475	.28 to .332
	Flannel	E	1	Union Spl. 4-needle	114-9	7.3			.045	.328
		G	1	Union Spl. 2-needle	203-2	6.77			.04, .05, .05½	.339
	Totals		2		317-11	6.95	1	1	.04, .04½, .05, .05½	.278 to .382
Full length box plait run on	Cotton (white, plain colors and stripes)	A	2	Union Spl. 2-needle	280-5	7.86	1	1	.045, .06	.354
		B	2	Union Spl. 4-needle	205-6	5.5	1	1	.065	.357
		C	1	Union Spl. 2-needle	180	4.74			.065	.308
		D	1	Union Spl. 2-needle	162	5.23			.06	.314
		E	1	Union Spl. 4-needle	179-11	7.13			.06	.428
	Totals		7		1,607-10	6.025	4	3	.04½ to .06½	.271 to .392
	Flannel	E	1	Union Spl. 4-needle	272-1	6.29			.06	.377
		G	1	Union Spl. 2-needle	14	5.6			.05	.28
	Totals		2		286-1	5.99	1	1	.05, .06	.299 to .359

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[1] $.04 and $.045, rates for striped material.

BUTTON-STAND.

The side of the shirt on which the buttons are sewed, the button-stand, is sometimes hemmed but more often reinforced with an extra piece of cloth. This piece may be folded and sewed to the raw edge of the button-stand, in which case a single-needle machine is used, or it may be turned and stitched on at both edges on a two-needle Union Special machine. The length of the seam varies with the length of the button-stand, which corresponds with the box plait.

On 1,154 dozen full length button-stands, run on a two-needle machine, the output per hour was 5.8 dozen. On 109 two-thirds length button-stands, the output was 10.7 dozen. While the wide disparity in the number of dozens run apparently weakens the comparison of outputs, the figures on the output of full length button-stands for the firm making the 109 dozen, was also 5.8, or 46 per cent less. The rates on the two-thirds lengths button-stands were $0.015 and $0.025, depending on the stitches per inch; on the full length stand, $0.04 to $0.055 per dozen. The $0.015 rate meant an earning power of $0.18 on the ten stitches per inch work; the $0.025 rate, on 15-stitch work, of $0.195 per hour.

TABLE V.

Average Output and Earnings per Hour of Pieceworkers on Shirts.

Process—Running on buttonstand.

Work done	Material	Establishment	Number records included	Machine used	Total dozen made	Average output per hour (doz.)	Number having higher output than the average	Number having lower output than the average	Rate per dozen (cents)	Average earnings per hour. (cents)
⅔ length button-stand run on	Cotton (white and plain colors).	B	2	Union Spl. 2-needle	109-9	10.7	1	1	.015, .025	.18 to .195
		G	1	Union Spl. 1-needle	811-4	14.0	--------	--------	.025	.35
	Totals		3		921-1	13.5	1	2	.015, .025	.20 to .34
	Flannel	G	1	Union Spl. 1-needle	107-5	8.7	--------	--------	.03	.26
Full length button-stand run on	Cotton	B	3	Union Spl. 2-needle	223-3	5.8	2	1	.045	.26
		C	2	Union Spl. 2-needle	555	4.85	1	1	.055	.267
		D	1	Union Spl. 2-needle	376	8.2	--------	--------	.04	.33
	Totals		6		1,154-3	5.8	4	2	.04 to .055	.23 to .32
	Striped soisette (Mercerized thrd. used)	C	1	Union Spl. 2-needle	57-8	3.3	--------	--------	.0625	.21
	Silk	C	1	Union Spl. 2-needle	114-2	3.7	--------	--------	.085	.32
	Flannel	G	1	Union Spl. 2-needle	109-9	8.4	--------	--------	.04	.336

The rates on the full length button-stand gave earnings varying from $0.23 to $0.32 per hour. Figures for only one operator were obtained on the single stitched button-stand. While making 811 dozen, this girl turned out 14 dozen per hour. Her rate of $0.025 netted her $0.35 per hour.

Although the figures on button-stand stitching are not sufficiently complete to draw conclusions, the indications are that while $0.025 is a sufficient rate on a folded single stitched facing, it is not sufficient to produce hourly earnings of $0.20 on a doubled stitched facing. The rates on the full length button-stand bring more than $0.20 for 5 out of 6 operators.

FRONT MAKING.

The front makers' work varies from shop to shop and from one day to another. She puts on pockets whenever there are pockets to be put on. She may finish the two-thirds box plaits. She may stay the button-stand, or if it has not been faced, she may hem the entire side. On shirts without pockets, she may be called upon to join the shoulders. Pockets vary in style, shape, number and rows of stitching. The pocket top may be hemmed or stitched down with a raw edge. It may be finished with a facing which is stitched on, turned and stitched on the outside, or with a facing that is stitched on the inside. The pocket may have a flap, in which case the front hand generally makes the flap as well as the pocket. The pockets may be pleated. A shirt may have one or two pockets; they may be single or double stitched. Pockets are round or square and may have one or two points.

With numerous combinations of the parts made, it was difficult to eliminate all changing factors save one of those mentioned above. A sufficient number of cases were found, however, to show tendencies. Hemming the top of the pocket instead of turning it, would seem to affect the output 5 per cent (figures from firm "A"). The addition of flaps reduce the productivity 50 per cent (figures from firm "G"). The difference between two pleated and two plain flap pockets was approximately 41 per cent (figures from firm "E"). The change made from turning the top to hemming it, was exactly approximated in the rates, $0.105 to $0.11 per dozen. The addition of the flaps was rendered equally remunerative by a rise in rate from $0.27 to $0.52, and the pleats by a change from $0.30 to $0.44. The difference in time taken to stitch a pocket with a second row varied. On a plain pocket (factory "F") the difference in output was 46 per cent, in rates, 44 per cent; on a faced pocket (factory "E") it was 50 per cent, rates 87 per cent; on a bellows flap pocket 17 per cent, rates 26 per cent. When two pockets as compared with one were stitched on, the percentage of decrease varied from 45 per cent to 54 per cent. The rates were increased by about 50 per cent. The changes in output caused by the shape of the pocket are not measurable.

Apparently the difference in work done, wherever its output was measurable, has been closely approximated by the employers and employees. A glance at Table VI will show, however, that frequently the basic rates are not sufficiently high to produce what the employers themselves would consider adequate earnings. Throughout front making the output and rates of firms ''A'' and ''E'' give average hourly earnings of from $0.10 to $0.198. While the average in establishments ''B'' and ''C'' and ''G'' were sometimes in the 20's, some operators always earned less. Firm ''F'' was the only one reporting on a number of operations that shows good average and individual earnings. This record was due to a higher output than other firms and, in all but one case, to a higher rate.

TABLE VI.

Average Output and Earnings per Hour of Pieceworkers on Shirts.

Process—Front making.

Work done	Material	Establishment	Number records included	Machine used	Total dozen made	Average output per hour (doz.)	Number having higher output than the average	Number having lower output than the average	Rate per dozen, cents	Average earnings per hour, cents
I.										
1. One pocket lap stitched down	Cotton (white and colored).	F	3	Singer	945-6	3.5	2	1	.09	.315
2. Pocket run on sgl. row stchg.		G	13	Wheeler & Wilson	391-4	1.6	9	4	.09	.141
3. Box plait finished.										
	Totals		16		1,336-10	2.6	6	10	.09	.234
II.										
1. One pocket lap hemmed 2. Pocket run on dbl. row stchg. 3. Box plait finished.	Cotton (white and colored).	F	7	Singer	209-3	1.9	2	5	.14	.27
III.										
1. One pocket lap stchd. down 2. Pocket run on sgl. row stchg. 3. Button side hemmed.	Cotton (white and colored).	A	10	Wheeler & Wilson	224	[1]1.35	6	4	.09	.121
IV.										
1. One pocket lap hemmed or stchd. down 2. Pocket run on sgl. row stchg. 3. Facing run on button side with 2 rows stchg. 4. Box plait finished.	Cotton (white and colored).	A	11	Wheeler & Wilson	392-3	[1]1.03	7	4	.105 to .11	.108 to .11
V.										
1. Two pocket laps hemmed	Cotton (white and colored).	F	5	Singer	32-4	1.02	2	3	.26	.266
2. Pockets run on sgl. row stchg.		K	4	Wheeler & Wilson	28-7	1.15	2	2	.21	.24
3. Box plait finished.										
	Totals		9		60-11	1.08	4	5	.21 to .26	.226 to .28
VI.										
1. Two pocket laps hemmed	Cotton	C	3	Singer	87-10	.98	2	1	.19	.186
2. Pockets run on dbl. row stchg.		D	1	Wheeler & Wilson	10	1.67			.15	.25
	Totals		4		97-10	1.023	3	1	.15 and .19	.153 to .194
VII.										
1. Two pocket laps stchd. down	Flannel	E	17	Singer	133-1	.6095	11	6	.15	.091
2. Pockets run on sgl. row stchg.		F	6	Singer	175-10	1.211	4	2	.22	.266
3. Box plait finished.										
4. Button-stand stayed.	Totals		23		308-11	.85	15	8	.15 and .22	.127 to .187

VIII.										
1. Two pocket laps hemmed	Cotton	G	5	Wheeler & Wilson	41-2	1.06	2	3	.25	.265
2. Pockets run on dbl. row stchg.	Flannel	F	6	Singer	99-7	.95	3	3	.33	.314
3. Box plait finished.		G	5	Wheeler & Wilson	34-11	.85	4	1	.27	.23
	Totals		11		134-6	.925	6	5	.27 and .33	.25 to .305
IX.										
1. Two pocket laps hemmed	Cotton	H	5	Wheeler & Wilson	100	.78	3	2	.20	.156
2. Pockets run on sgl. row stchg.	Flannel	E	8	Singer	16-4	.44	4	4	.21	.092
3. Box plait finished.										
4. Button side hemmed.										
X.										
1. Box plait finished	Cotton	B	8	Singer	69-6	1.77	5	3	.12	.213
2. Shoulders joined dbl. row stchg.										
XI.										
1. Facings stchd. to 2 pockets	Cotton	E	12	Singer	59-7	.847	5	7	.16	.135
2. Pockets run on sgl. row stchg.										
XII.										
1. Facings stchd. to 2 pockets	Cotton	B	8	Singer	59	1.05	5	3	.245	.258
2. Pockets run on dbl. row stchg.										
3. Box plait finished.										
XIII.										
1. Imitation facings stchd. to 2 pkts.	Flannel	E	12	Singer	105-3	1.21	5	7	.12	.145
2. Pockets run on sgl. row stchg.										
XIV.										
1. Imitation facings stchd. to 2 pkts.	Flannel	E	7	Singer	31	.665	3	4	.17	.113
2. Pockets run on sgl. row stchg.										
3. Button-stand stayed.										
4. Box plait finished.										
XV.										
1. Two pocket laps hemmed	Cotton	E	16	Singer	202-11	.556	9	7	.30	.167
2. Pockets run on sgl. row stchg.	Flannel	E	15	Singer	147	.535	10	5	.30	.161
3. Flaps made and stchd. on.										
XVI.										
1. Two pocket laps hemmed	Cotton	J	3	Singer	21-11	.62	1	2	.27½, .30½	.101, .212
2. Pockets run on sgl. row stchg.		K	4	Singer	30-1	.713	2	2	.35	.25
3. Flaps made and stchd. on.										
4. Box plait finished.	Totals		7		52	.671	4	3	.27½, .30½, .35	.184 to .235
	Flannel	F	6	Singer	121-2	.92	3	3	.36 and .37	.331 to .34
		H	3	Wheeler & Wilson	18	.57	1	2	.26	.147
		J	3	Singer	69-1	.677	1	2	.275	.186
	Totals		12		208-3	.784	6	6	.26 to .37	.204 to .29

TABLE VI—Continued.

Average Output and Earnings per Hour of Pieceworkers on Shirts.

Process—Front making.

Work done	Material	Establishment	Number records included	Machine used	Total dozen made	Average output per hour (doz.)	Number having higher output than the average	Number having lower output than the average	Rate per dozen, cents	Average earnings per hour, cents
XVII.										
1. Two pocket laps hemmed	Flannel and broadcloth.	C	3	Singer	8-10	.442	2	1	.50	.221
2. Two-part pockets run on dbl. row stchg.		G	7	Wheeler & Wilson	31-5	.428	5	2	.51 and .52	.246 to .209
3. Flaps made and stchd. on.	Totals		10		40-3	.431	7	3	.50 to .52	.215 to .224
4. Box plait finished.										
XVIII.										
1. Pleats caught	Cotton	E	8	Singer	25-2	.33	3	5	.44	.145
2. Two pocket laps hemmed.	Flannel	E	14	Singer	88-8	.52	8	6	.44	.23
3. Pockets run on, sgl. row stchg.		F	6	Singer	22-3	.69	4	2	.46	.317
4. Flaps made and stchd. on.		D	1	Wheeler & Wilson	9-10	.522			.52	.271
	Totals		21		120-9	.545	10	11	.44 to .52	.24 to .283
XIX.										
1. Three pocket laps hemmed	Cotton	A	8	Wheeler & Wilson	169-9	[1].841	5	3	.21	.177
2. Pockets run on, sgl. row stchg.										
3. Box plait finished.										
4. Facing run on button side, 2 rows stchg.										
XX.										
1. Three pocket laps hemmed	Cotton	A	6	Wheeler & Wilson	136-11	[1].824	4	2	.24	.198
2. Pockets run on. dbl. row stchg. on 2.										
3. Box plait finished.										
4. Facing run on button side, 2 rows stchg.										

[1] Includes output of operators with less than one year of experience.

YOKES.

Yokes are stitched to the backs of the shirts in several ways. Generally one piece of cloth is run on the back as a reinforcement either in a straight line or forming one or two points. The operators fold the rough edge of the yoke under as they stitch the piece on. Sometimes a second row of stitching is run on; when done on a machine having one needle, this means stitching two rows; when done on a two-needle machine, it is equivalent to a single row of work, as both stitchings are put on at the same time. On other shirts, the back is not cut to the neck, and a two-piece yoke serves to join it to the collar band. On Norfolk shirts a double yoke is sewed back and front, but these shirts are not made in large quantities. The yoke hand sometimes stitches on the size ticket.

The output on 929 dozen one-piece yokes, single stitched, was 7.43 dozen per hour. The rates paid ranged from $0.03 to $0.035 per dozen, producing average earnings of from $0.19 to $0.28 in different establishments. When an extra row of stitching was put on with a single-needle machine, the size ticket was also run on. Records of this work were obtained from four firms for 20 women. The average output was 2.18 dozen per hour. The usual rates, $0.06 and $0.07, netted earnings in the several firms of from $0.08 to $0.15 per hour. Only one illustration of the double yoke was obtained. The figures are for girls working on $58\frac{5}{12}$ dozen at the rate of $0.11. This yoke was stitched twice on the outside and the size ticket was sewed on. The hourly output was 1.63 dozen, netting $0.18 per hour.

The rates on the last two yokes described are not therefore sufficient to give a minimum earning power of $0.20 in the establishments represented.

TABLE VII.

Average Output and Earnings per Hour of Pieceworkers on Shirts.

Process—Yokes.

Work done	Material	Establishment	Number records included	Machine used	Total dozen made	Average output per hour (doz.)	Number having higher output than the average	Number having lower output than the average	Rate per dozen, cents	Average earnings per hour, cents
I. 1. One-piece yoke run on back with 1 row stchg.	Cotton	A	2	Wheeler & Wilson	575·6	7.84	1	1	.035	.274
		E	2	Wilcox & Gibbs	257·7	6.48	1	1	.03	.194
		G	1	Wheeler & Wilson	96·1	8.12			.035	.284
	Totals		5		929·2	7.43	2	2	.03 to .035	.223 to .26
	Flannel	A	2	Wheeler & Wilson	57·4	5.24	1	1	.04	.21
		E	2	Wilcox & Gibbs	515·5	7.32	1	1	.03	.22
		G	1	Wheeler & Wilson	138·3	10.12			.045	.455
		H	1	Wheeler & Wilson	295·4	5.099			.04	.204
	Totals		6		1,006·4	6.59	2	2	.03 to .04½	.198 to .297
II. 1. One-piece yoke run on back with 2 rows stchg. 2. Size ticket tchd. on.	Cotton	B	16	Singer	241·1	2.49	5	11	.06	.149
		D	1	Singer	35·11	1.33			.06	.08
		J	2	Singer	53·5	1.90	1	1	.07	.133
		L	1	Singer	4	2.00			.11	.22
	Totals		20		370·5	2.18	9	11	.06 to .11	.131 to .24
III. 1. Two-piece yoke run on back with 2 rows of stchg. 2. Size ticket stchd. on.	Cotton	B	10	Singer	58·5	1.63	4	6	.11	.179

JOINING.

Stitching the shoulders of the shirt together is known as "joining." The two pieces of material forming the back, that is the yoke and back proper or the double yoke, and the front are most often joined on a Union Special two-needle machine. This machine has a folding attachment which turns under the raw edges as it sews, so that only a smooth surface with two rows of stitching is visible. In some cases, however, the same work is done on a single-needle machine. The operator must then run two rows of stitching on both shoulders to produce the same effect.

Figures from seven firms show an average output of 7.2 dozen per hour on the Union Special machine. The rates varied from $0.025 to $0.05 per dozen in different firms and on different grades of work. All girls were not able to make $0.20 at these rates, six out of thirteen falling below that sum.

The rates for single-machine joining varied from $0.04 to $0.06. The weighted average output was 6.89 dozen, the flat average, 4.5 dozen. This difference is due to the unusually large output of the operator in factory "E," who turned out on a Wilcox-Gibbs machine almost eight dozen per hour. At her low rate of $0.04 she was able to make more than the other ten operators getting $.0525 and $0.06. Factory "B" has the low output of 2¼ dozen shirts per hour.

TABLE VIII.

Average Output and Earnings per Hour of Pieceworkers on Shirts.

Process—Joining.

Work done	Material	Establishment	Number records included	Machine used	Total dozen made	Average output per hour (doz.)	Number having higher output than the average	Number having lower output than the average	Rate per dozen, cents	Average earnings per hour, cents
1. Shoulders joined on 2-needle machine.	Cotton (incl. chambray, madras, etc.).	A	1	Union Spl. 2-needle	211-11	7.44			.03 to .05	.287 to .305
		B	3	Union Spl. 2-needle	128-10	9.41	1	2	.025 to .04	.271 to .33
		C	1	Union Spl. 2-needle	93	6			.04	.24
		D	3	Union Spl. 2-needle	174-7	6.65	2	1	.035	.233
		G	1	Union Spl. 2-needle	491-1	10.39			.03	.312
		J	2	Union Spl. 2-needle	32-3	4.66	1	1	.03 to .04	.146 to .149
		K	2	Union Spl. 2-needle	116-4	3.32	1	1	.05	.166
	Totals		13		1,248	7.20	5	8	.025 to .05	.18 to .36
	Flannel and broadcloth.	A	1	Union Spl. 2-needle	31-2	4.45			.04	.178
		B	1	Union Spl. 2-needle	13-8	5.12			.0425	.218
		G	1	Union Spl. 2-needle	122-8	6.91			.04	.276
		J	1	Union Spl. 2-needle	23-4	9.99			.04	.40
	Totals		4		190-10	5.87	2	2	.04 to .0425	.235 to .249
1. Shoulders joined on 1-needle machine, 2 rows stchg.	Cotton (incl. chambray, madras, etc.).	B	8	Singer 1-needle	54-4	2.27	5	3	.06	.136
		C	1	Singer 1-needle	69-8	5.81			.0525	.305
		E	1	Wilcox & Gibbs	175-9	7.96			.04	.32
		L	1	Singer 1-needle	10	4			.06	.24
	Totals		11		399-9	6.89	1	10	.04 to .06	.275 to .413
	Flannel	B	1	Singer	2	2.00			.06	.12
		E	1	Wilcox & Gibbs	54-9	10.02			.04	.40
	Totals		2		56-9	8.77	1	1	.04 to .06	.351 to .526

COLLAR AND NECKBAND MAKING.

Collars are made of two pieces of material with or without a lining. The two or three pieces are run together on three sides and turned so that the raw edge is inside. The corners are round or square and stitched on the outside with one or two rows. The collar is then put on a band, made of the shirting, an inner lining or stiffening and a facing. In some cases, the collars are creased so that the first running and turning can be dispensed with, but this method was not frequently used. Each step in the making may be done by different operators or may be combined with others. In one California factory, turning was done by one girl, the collar operator doing all the other operations. In two others, the running together and turning were sometimes done by one girl, the rest by other operators. In most cases, however, the entire making is done by each collar operator. When work is rushed, it is the custom of some factories to give operators the collars to turn at home after the factory is closed.

The three types of collars made extensively during the period of the investigation were the extension band collar, the military collar and, less important, the sport collar. The first is a soft negligee collar, with flaring points, stitched to a low band extending beyond the collar and buttoning to the other side. A military collar is a soft standing collar cut square in front and made to stand up by a high neckband, which has extra stitchings to help keep it firm. A sport collar is a large low collar stitched to the shirt without a band so that it can be worn open at the neck or buttoned up like a negligee collar.

EXTENSION BAND COLLAR.

The hourly output on $832\frac{8}{12}$ dozen two-piece extension band collars, stitched once, was $2\frac{1}{2}$ dozen collars. When an extra row of stitching was put on, it was reduced to $2\frac{1}{4}$ dozen. The rates on the first collar were $0.115 and $0.125, on the second $0.135 and $0.14. While the average operator would earn from $0.19 to $0.31 per hour on the first work and about $0.30 on the second, seven out of the 17 operators timed earned less than $0.19 per hour.

The output on a three-pieced single-stitched collar was 1.10 dozen. The rates paid were $0.16 and $0.175, netting only two out of eight operators $0.20 or more per hour. The figures for the three-pieced double stitched collar were obtained in flannel only. On $513\frac{3}{12}$ dozen, made in six establishments, the average output was 1.12 dozen. At the rates paid, $0.14, $0.15, $0.18 and $0.19, half the operators did not make $0.20 in an hour. For factory "F" the output was sufficiently high to make the $0.14 rate effective, while $0.18 and $0.19 brought lower earnings in other factories. A girl turning and creasing the collars did approximately 11½ dozen collars per hour. The output of the collar makers relieved of this one process did not vary much on two- and three-piece goods, but always fell below that of factories where one girl did all the work. This was probably due to differences in factory management and in operators' skill.

In a factory where one girl ran and turned the three-collar pieces, her output per hour was 5.12 dozen. The girl who stitched the collar twice and put it on the band made 2.42 dozen or about one-half as much. The rates approximated the difference in hourly output.

TABLE IX.

Average Output and Earnings per Hour of Pieceworkers on Shirts.

Process—Collar making.

Work done	Material	Establishment	Number records included	Machine used	Total dozen made	Average output per hour (doz.)	Number having higher output than the average	Number having lower output than the average	Rate per dozen. cents	Average earnings per hour, cents
I. 1. Two-piece collar run, turned and stchd. once. 2. Collar stchd. to extension band.	Cotton (incl. chambray, madras, hick. stripe, etc.).	B	1	Singer	12	1.33	--------	--------	.12	.159
		F	5	Singer	52.8	2.81	3	2	.125	.351
		G	5	Wheeler & Wilson	296	2.81	1	4	.115	.323
	Totals		11		832-8	2.49	5	6	.11½ to .12½	.186 to .311
II. 1. Two-piece collar run and stchd. once. 2. Collar stchd. to extension band.	Cotton (incl. chambray, mad., hickory stripe, etc.).	A	7	Wheeler & Wilson	226-2	1.37	5	2	.11	.151
III. 1. Two-piece collar run, turned and stchd. twice. 2. Collar stchd. to extension band.	Cotton (incl. chambray, mad., hick. stripe, etc.).	E	6	Singer	79-10	1.21	3	3	.14	.169
		F	5	Singer	538-2	2.55	2	3	.135	.344
	Totals		11		618	2.23	5	6	.13½ to .14	.301 to .312
	Flannel	H	4	Wheeler & Wilson	198-3	1.2	2	2	.16	.190
IV. 1. Two-piece collar run and stchd. twice. 2. Collar stchd. to extension band.	Cotton	H	6	Wheeler & Wilson	235-1	1.59	3	3	.13	.206
V. 1. Three-piece collar run, turned and stchd. once. 2. Collar stchd. to extension band.	Cotton	B	4	Singer	37-10	1.01	1	3	.175	.177
		C	1	Singer	31-9	1.43	--------	--------	.175	.25
		K	3	Wheeler & Wilson	36	.98	2	1	.16	.156
	Totals		8		105-7	1.10	4	4	.16 to .175	.17½ to .19¼
VI. 1. Three-piece collar run and stchd. once. 2. Collar stchd. to extension band.	Cotton	A	9	Wheeler & Wilson	266-8	1.6	5	4	.12	.192
	Flannel	A	5	Wheeler & Wilson	57-4	1.48	3	2	.14	.207

TABLE IX—Continued.

Average Output and Earnings per Hour of Pieceworkers on Shirts.

Process—Collar making.

Work done	Material	Establishment	Number records included	Machine used	Total dozen made	Average output per hour (doz.)	Number having higher output than the average	Number having lower output than the average	Rate per dozen, cents	Average earnings per hour, cents
VII.										
1. Three-pieces run, turned and stchd. twice. 2. Collar stchd. to extension band.	Flannel, 5 oz. or less	E	10	Singer	329·7	1.04	4	6	.14	.145
		F	4	Singer	81·5	1.84	2	2	.14	.258
		G	5	Wheeler & Wilson	44·7	1.77	3	2	.15	.265
		H	3	Wheeler & Wilson	43·8	1.16	1	2	.19	.220
		J	2	Wilcox & Gibbs	8·3	.87	1	1	.18	.156
		K	2	Wheeler & Wilson	5·9	.99	1	1	.19	.188
	Totals		26		513·3	1.12	15	14	.14 to .19	.157 to .213
VIII.										
1. Three-pieces run and turned	Flannel	F	35	Wilcox & Gibbs	126·10	5.12			.055	.28
IX.										
1. Collar stchd. twice 2. Collar stchd. to extension band.	Flannel	F	3	Wilcox & Gibbs	144	2.42	1	2	.12	.29
X.										
1. Three-piece military collar run, turned and stchd. once. 2. Collar stchd. to band.	Flannel, 5 oz. or less and broadcloth.	C	1	Singer	17·8	1.47			.1675	.246
		F	3	Wilcox & Gibbs	122·10	1.97	1	2	.16	.315
		G	4	Wheeler & Wilson	36·7	2.13	3	1	.14	.298
	Totals		8		177·1	1.94	4	4	.14 to .1675	.27 to .325
XI.										
1. Three-piece military collar run, turned and stchd. twice. 2. Collar stchd. to band.	Cotton	E	5	Singer	56·7	.938	2	3	.21	.195
		J	2	Wilcox & Gibbs	31·1	1.47	1	1	.23	.338
		K	1	Wheeler & Wilson	5	.952			.27	.256
	Totals		8		92·8	1.06	2	6	.21 to .27	.22 to .286
	Flannel (wt. 5 oz. or less).	B	1	Singer	2·5	1.21			.205	.248
		E	9	Singer	400·7	1.14	5	4	.21	.239
		K	4	Wheeler & Wilson	50·2	.76	1	3	.22	.167
	Totals		14		453·2	1.084	6	7	.205 to .22	.222 to .238

XII. 1. Three-ply neck-band made	Cotton	B	4	Singer	106-8	1.98	2	2	.11	.218
		C	1	Singer	30-9	2.28	--------	--------	.10	.228
		J	1	Wilcox & Gibbs	15-5	1.47	--------	--------	.15	.221
		K	2	Wheeler & Wilson	36	1.76	1	1	.10	.176
	Totals		8		188-10	1.92	4	4	.10 to .15	.192 to .288
XIII. 1. Two-piece sport collar run, turned and stchd. once.	Cotton	E	9	Wilcox & Gibbs	117-1	1.79	5	4	.15	.268
		J	1	Wilcox & Gibbs	13-5	1.25	--------	--------	.19	.237
	Totals		10		130-6	1.64	6	4	.15 to .19	.246 to .31

MILITARY COLLAR.

Figures on the output on a lined military collar, stitched once, were not obtainable for any quantity of cotton shirts. On flannel the operators made just short of two dozen shirts per hour. The rates ranging from $0.14 to $0.16¾ netted earnings in the several firms of from $0.25 to $0.32. When the same material was double stitched in other establishments the output was a little over one dozen. Rates of $0.20½, $0.21 and $0.22 gave only seven out of the fourteen operators earnings of $0.20 or more per hour.

SPORT COLLAR.

Ten operators averaged 1.64 dozen sport collars per hour working on 130½ dozen. At rates of $0.15 and $0.19 their average earnings ranged from $0.24 in one establishment to $0.27 in another, three women earning less than $0.20.

NECKBANDS.

Neckbands are made by stitching together three pieces of cloth and a small piece to form the fly protecting the collar button. Working on 189 dozen, eight operators made 1.92 dozen bands per hour. The rates ranged from $0.10 to $0.15 per dozen.

In collar making as on fronts, many women earn less than $0.20 an hour. Operators in establishments "F" and "C" only, maintain a sufficiently high output on the several style collars to earn more than that amount.

COLLARS ON.

Stitching the collar band to the shirt is considered the operation requiring most care in shirt making. The setting of the collar gets most attention from the wearer and is therefore the cause of complaint if not perfect. The operator must notch the collar band and the shirt so that the right points will meet when stitched, trim the raw edges and stitch on the band. Often, she also runs on the size ticket.

About 1½ dozen extension band collars can be stitched on in an hour. The output when the size ticket was also sewed on was 1.3 dozen. When the band was not lined and the stitching wide, the output reached 2¾ dozen. Rates for the last work are $0.115 and $0.12; for sewing on a lined band $0.11, $0.14 and $0.165, and with the ticket $0.14 to $0.175. The $0.11 rate on lined bands meant an average earning power of $0.16 per hour to the girls putting them on in the factory paying that rate. When the size ticket was sewed on, half of the 12 operators in factory "A" could not turn out enough work to make $0.20 with the high rate of $0.175 per dozen.

To strengthen the high band on a military collar, a stitching is run through the center, either in a straight line or in a zigzag. This extra stitching decreases the output. On a band stitched in the first manner, the women averaged 1.37 dozen per hour. The $0.17 and $0.18 rates paid in two of the three firms brought earnings of $0.22 and $0.30. In one factory the output was decreased 14 per cent when the extra band stitching was zigzagged and a size ticket put on.

The sport collar is most difficult to stitch on. The hourly production was just less than one dozen: $0.14 paid by one firm brought $0.13 per hour, the $0.25 paid in the two other firms, $0.18 and $0.24 per hour to the operators.

Neckbands are also more difficult to sew on than the ordinary collar, because the center of the neckband must be left free of the shirt on the outer side, so that the collar button can be inserted. The operators on 306 dozen turned out 1.35 dozen in an hour. Rates ranged from $0.15 to $0.17 and all but five out of seventeen operators reporting made more than the minimum of $0.20 specified by employers.

TABLE X.

Average Output and Earnings per Hour of Pieceworkers on Shirts.

Process—Collar on.

Work done	Material	Establishment	Number records included	Machine used	Total dozen made	Average output per hour (doz.)	Number having higher output than the average	Number having lower output than the average	Rate per dozen, cents	Average earnings per hour, cents
I. 1. Extension band collar stchd. to shirt (lined band).	Cotton	B	4	Singer	42·9	1.45	1	3	.165	.239
		C	1	Singer	20	1.6	-----	-----	.165	.264
		E	6	Singer	109	1.47	3	3	.11	.162
		J	2	Wilcox & Gibbs	9·9	1.43	1	1	.14	.20
	Totals		13		181·6	1.47	6	7	.11 to .165	.162 to .243
	Flannel	E	8	Singer	319·4	1.54	4	4	.11	.169
		J	2	Singer	39·4	1.4	1	1	.15	.21
	Totals		10		358·8	1.53	5	5	.11 to .15	.168 to .229
II. 1. Extension band collar stchd. to shirt (lined band). 2. Size ticket stchd. on.	Cotton (incl. chambray, madras, etc.).	A	12	Wheeler & Wilson	791·9	1.07	7	5	.175	.187
		F	4	Wilcox & Gibbs	102·11	1.73	2	2	.1625	.281
		G	7	Wheeler & Wilson	398·9	1.94	4	3	.14	.271
		K	2	Wheeler & Wilson	83·6	1.54	1	1	.16	.246
	Totals		25		1,376·11	1.3	17	8	.14 to .175	.182 to .227
(Unlined band)	Cotton chambray	B	1	Singer	5	1.22	-----	-----	.12	.146
		F	5	Singer	1,182·3	2.68	2	3	.12	.322
		G	1	Wheeler & Wilson	64	2.7	-----	-----	.115	.311
	Totals		7		1,251·3	2.67	3	4	.115 to .12	.307 to .32
(Lined band)	Flannel (wt. 5 oz. or less).	A	6	Wheeler & Wilson	45·10	.94	3	3	.20	.188
		F	4	Wilcox & Gibbs	142·4	1.4	1	3	.1725	.242
		G	7	Wheeler & Wilson	54·4	1.47	4	3	.15 to .165	.273 to .225
		H	2	Wheeler & Wilson	295·10	1.72	1	1	.14	.241
	Totals		19		538·4	1.49	12	7	.14 to .20	.209 to .298

(Lined band)	Flannel (wt. 7 oz.).	F	1	Wilcox & Gibbs	56-8	1.63			.1725	.281
		G	8	Wheeler & Wilson	84-4	1.55	4	4	.18 to .185	.287
	Totals		9		141	1.58	5	4	.17¼ to .185	.273 to .292
III.										
1. Military collar stchd. to shirt 2. Collar band stchd. through center.	Cotton	E	4	Singer	22-4	1.3	3	1	.17	.221
		F	1	Wilcox & Gibbs	9	1.64			.18	.295
		J	2	Wilcox & Gibbs	54-11	1.36	1	1	.14	.19
	Totals		7		86-3	1.37	5	2	.14 to .18	.192 to .247
	Flannel	B	3	Singer	18-9	1.04	2	1	.17	.177
		E	8	Singer	307-3	1.53	5	3	.17	.26
	Totals		11		326	1.49	5	6	.17	.253
IV.										
1. Military collar stchd. to shirt 2. Collar band quilted 3. Size ticket stchd. on	Cotton	F	4	Wilcox & Gibbs	43-6	1.41	3	1	.25	.353
		K	1	Wheeler & Wilson	8-6	.94			.19	.179
	Totals		5		52	1.3	3	2	.19 to .25	.247 to .325
	Flannel	F	4	Wilcox & Gibbs	213-6	1.38	2	2	.25	.345
		G	7	Wheeler & Wilson	66-8	1.59	5	2	.23	.366
		K	2	Wheeler & Wilson	18-3	1.24	1	1	.20	.248
	Totals		13		298-5	1.41	9	4	.20 to .25	.282 to .353
V.										
1. Neckband stchd. to shirt	Cotton[1]	B	8	Singer	128	1.35	4	4	.17	.23
		C	1	Singer	26-11	1.4			.165	.231
		D	1	Singer	25-1	1.3			.165	.215
		E	4	Singer	21-8	1.55	1	3	.15	.237
		J	2	Wilcox & Gibbs	4-4	.69	1	1	.15	.104
		K	1	Singer	100-4	1.34			.17	.228
	Totals		17		306-4	1.35	8	9	.15 to .17	.203 to .23
VI.										
1. Sport collar stchd to shirt	Cotton	B	6	Singer	26-1	.96	3	3	.14	.134
		E	7	Singer	93-4	.97	3	4	.25	.243
		K	1	Wheeler & Wilson	2	.71			.25	.178
	Totals		14		121-5	.96	6	8	.14 to .25	.134 to .24

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[1] Stitched with mercerized thread.

The output from firm to firm is nearly equal on this process of putting on collars, establishment "A" being the only one falling noticeably below others. The difference in earnings in factories, therefore, is due very largely to such rate differences as $0.11 and $0.165, $0.14 and $0.25 for the same work.

SLEEVE PIECING.

The sleeves are pieced under the arm on a two-needle machine, generally of Union Special make. Figures on hourly productions were obtained from seven factories on 1500$\frac{5}{6}$ dozen shirts. The average output was 7.63 dozen pairs of sleeves per hour. At the prevailing rate of $0.03 and $0.04 the average earnings in the several shops ranged from $0.13 to $0.31. The low output in factory "K" was probably due to the small size of the bundles and slack work. Excluding the three operators in this factory, three out of ten others earned less than $0.20.

CUFF AND SLEEVE OPENINGS.

While one operator often makes the cuffs and another finishes the sleeve openings, these two operations or parts of them are frequently combined, rendering it necessary to treat them together.

Cuffs are frequently made of two pieces of the shirting and a lining or stiffening. These three pieces are stitched on three sides and turned so the raw edge is inside. The corners may be square or round. The cuffs are creased and then sewed to the sleeve and stitched around the four sides. Sometimes a cuff is made of a single piece of the shirting with or without a lining, this piece being sufficiently long to be folded to form both the inner and outer sides of the cuff.

In one firm, an operator turned out approximately five dozen pairs of cuffs in an hour, that is, ran and turned the three pieces. When the cuffs were also put on the sleeves and stitched on the outside, the same operator's output dropped to 1.14 dozen pair, or more than 77 per cent. Her rate varied as three to one so that her earnings on the second work were but $0.16 an hour.

TABLE XI.

Average Output and Earnings per Hour of Pieceworkers on Shirts.

Process—Sleeve piecing.

Work done	Material	Establishment	Number records included	Machine used	Total dozen made	Average output per hour (doz.)	Number having higher output than the average	Number having lower output than the average	Rate per dozen, cents	Average earnings per hour, cents
Gussets stchd. to long sleeve on 2-needle machine.	Cotton (incl. chambray, percale, madras, mercerized cotton).	A	1	Union Special 2-needle	687-3	9.47			.03	.284
		B	3	Union Special 2-needle	305-2	7.01	1	2	.04	.28
		E	1	Wilcox & Gibbs	174-6	7.83			.04	.313
		G	1	Union Special	155-7	6.42			.035	.225
		H	2	Union Special 2-needle	27-10	6.96	1	1	.03	.209
		J	2	Union Special 2-needle	57-2	7.07	1	1	.04	.283
		K	3	Union Special 2-needle	93-4	4.41	1	2	.03	.132
	Totals		13		1,500-10	7.63	5	8	.03 to .04	.23 to .31
	Flannel and broadcloth.	A	1	Union Special 2-needle	58-4	7.87			.035	.275
		B	1	Union Special 2-needle	7-7	4.55			.0475	.216
		E	1	Wilcox & Gibbs	95-2	6.04			.04	.242
		G	1	Union Special 2-needle	84-2	3.93			.05	.197
		J	2	Wilcox & Gibbs	22-4	4.18	1	1	.04	.167
		K	2	Union Special 2-needle	20-9	2.20	1	1	.04	.088
		L	1	Singer Special 2-needle	4	2.5			.10	.25
	Totals		9		292-4	4.71	2	7	.035 to .10	.163 to .471

The turn back cuff, which is generally about three inches longer than a straight cuff, is known to the trade as a French cuff. While making this and stitching it to the shirt, seven operators did .91 dozen pair in an hour. At the rate of $0.32, girls in the three firms earned from $0.22 to $0.41 per hour.

Sleeve openings are finished in several ways. A continuous facing may be run on both sides on a Union Special two-needle machine, which folds under the raw edges as it stitches. Both openings may be hemmed, or the inner opening may be hemmed and a placket stitched to the outer opening. In the latter finish, the placket end must be turned square or pointed, a process called "finishing the placket." Sometimes separate facing or plackets are stitched to both sides on a single-needle machine.

A little more than seven dozen pair of continuous plackets were run on a two-needle machine in an hour, the amount worked on being 1,220 dozen shirts. At rates of from $0.03 to $0.06, the average earnings fell between $0.21 and $0.38. In one firm only was the output less than this because the girls worked slowly to avoid having to wait around with nothing to do.

On hemming the sleeve openings the output was 3.17 dozen shirts per hour, or less than half the output of the same firm on the continuous placket. The rate of $0.04 yielded an hourly earning of $0.13.

On the hem and placket openings the production was 2.31 dozen shirts per hour. In two other establishments the output was 1.42 dozen shirts, when the placket was also finished. With the $0.11 rate in the first firms and $0.12 and $0.14 in the second ones, 13 out of the 21 operators earned less than $.20 per hour. When only the placket finishing was done the output was three dozen pair sleeves per hour.

When the several processes described above were combined the production and rates varied. Making and putting on a three-piece cuff and finishing the placket of 109 dozen shirts took, on an average, one hour, although seven out of twelve operators required more time. While a $0.14 rate in one firm meant an hourly earning of $0.23 for its operators, a $0.22 rate in another firm brought only $0.17 an hour.

TABLE XII.

Average Output and Earnings per Hour of Piece Workers on Shirts.

Process—Cuffs and sleeve openings.

Work done	Material	Establishment	Number records included	Machine used	Total dozen made	Average output per hour (doz.)	Number having higher output than the average	Number having output lower than the average	Rate per dozen, cents	Average earnings per hour, cents
I. 1. Three-piece cuffs run and turned	Cotton (white and colored).	H	1	Wheeler & Wilson	109	4.95			.05	.247
	Flannel	H	1	Wheeler & Wilson	278	4.52			.06	.271
II. 1. Two-piece cuffs run and turned 2. Cuffs stchd. to shirt. 3. One row outer stchg. on cuffs.	Flannel	E	1	Wilcox & Gibbs	5-6	1.08			.14	.151
		H	7	Wheeler & Wilson	311-11	1.09	4	3	.15	.164
	Totals		8		317-5	1.09	4	4	.14 to .15	.152 to .164
III. 1. Three-piece cuffs run and turned 2. Cuffs stchd. to shirt. 3. One row outer stchg. on cuffs.	Cotton (white and colored).	H	1	Wheeler & Wilson	14-10	1.14			.14	.16
		K	2	Wheeler & Wilson	44-11	.41	1	1	.15	.061
		L	1	Singer	4	1.25			.17	.213
	Totals		4		63-9	.51	3	1	.14 to .17	.071 to .086
	Flannel	B	1	Singer	1	.8			.17	.136
		E	1	Singer	3	.75			.16	.120
		J	1	Singer	5-5	1.03			.26	.268
		L	1	Singer	4	1.07			.17	.181
	Totals		4		13-5	.94			.16 to .26	.150 to .244
IV. 1. Three-piece cuffs run and turned 2. Cuffs stchd. to shirt. 3. Two rows of outer stchg. on cuffs.	Cotton (white, col. and striped).	B	3	Singer	7-3	.41	2	1	.19	.078
		C	2	Singer	25-7	1.21	1	1	.21 to .22	.257 to .269
	Totals		5		32-10	.85	2	3	19. to .22	.161 to .187
	Flannel	B	1	Singer	3-9	.41			.20	.082
		D	1	Singer	2	.26			.20	.052
	Totals		2		5-9	.35	1	1	.20	.070

TABLE XII—Continued.

Average Output and Earnings per Hour of Piece Workers on Shirts.

Process—Cuffs and sleeve openings.

Work done	Material	Establishment	Number records included	Machine used	Total dozen made	Average output per hour (doz.)	Number having higher output than the average	Number having lower output than the average	Rate per dozen, cents	Average earnings per hour, cents
V.										
1. Three-piece French cuffs run and turned.	Cotton (white and colored).	B	4	Singer	11-9	.75	2	2	.32	.240
2. Cuffs stchd. to shirt.		C	2	Singer	27-5	1.28	1	1	.32	.409
3. One row of outer stchg. on cuffs.		D	1	Singer	15-8	.68			.32	.218
	Totals		7		54-10	.91	2	5	.32	.291
VI.										
1. Continuous placket run on sleeve with a 2-needle machine.	Cotton (incl. mercerized cotton sewed with cotton thread).	A	2	Union Special 2-needle	924-11	7.72	1	1	.045, .05, .06	.378, .315, .268
		B	1	Union Special 2-needle	95-6	9.77			.03	.293
		E	1	Union Special 2-needle	171-4	7.42			.05	.371
		J	2	Union Special 2-needle	28-2	1.57	1	1	.05 to .06	.133
	Totals		6		1,219-11	7.15	4	2	.03 to .06	.214 to .249
	Flannel	A	2	Union Special	57-4	5.28	1	1	.05	.264
		E	1	Union Special	787-2	5.99			.05	.30
		J	2	Union Special	56-4	1.79	1	1	.055 to .065	.107 to .124
	Totals		5		900-10	5.18	2	3	.05 to .065	.259 to .337
VII.										
1. Sleeve openings hemmed	Cotton	A	1	Wheeler & Wilson	45-5	3.17			.04	.127
VIII.										
1. Inner sleeve opening hemmed	Cotton	F	6	Singer	277-11	2.37	2	4	.11	.260
2. Placket stchd. on outer opening.		J	1	Singer	6-10	1.12			.11	.123
	Totals		7		284-9	2.31	2	5	.11	.254
	Flannel	F	4	Singer	402-6	2.15	2	2	.12	.258

IX. 1. Inner sleeve opening hemmed. 2. Placket stchd. on outer opening. 3. Placket finished with point.	Cotton	B	12	Singer	208-10	1.36	5	7	.14	.190
		K	2	Wheeler & Wilson	23-1	2.35	1	1	.12	.282
	Totals		14		231-11	1.42	6	8	.12 to .14	.170 to .199
	Flannel	B	3	Singer	3-4	.61	1	2	.195	.118
		H	6	Wheeler & Wilson	262-1	1.23	4	2	.11	.135
	Totals		9		265-5	1.21	5	4	.11 to .195	.133 to .236
X. 1. Facing sewed to inner sleeve op'g. 2. Outer facing pieced. 3. Outer facing or placket stchd. to opening. 4. Placket finished with point.	Cotton	C	3	Singer	167-11	1.37	1	2	.18	.247
	Mercerized cotton stchd. with mer. thread.	C	3	Singer	66-2	.87	2	1	.195 to .205	.236 to .156
XI. 1. Placket finished	Cotton	H	1	Wheeler & Wilson	75-9	3.03			.06	.181
XII. 1. Two-piece cuffs run and turned 2. Cuffs stchd. to shirt. 3. One row of outer stchg. on cuffs. 4. Plackets finished with points.	Flannel	E	13	Wilcox & Gibbs	375	.94	5	8	.20	.188
XIII. 1. Three-piece cuffs run and turned 2. Cuffs stchd. to shirt. 3. One row of outer stchg. on cuff. 4. Placket finished with point.	Cotton	E	8	Wilcox & Gibbs	119-1	.79	4	4	.22	.173
		F	3	Singer	138-4	1.66	2	1	.14	.232
		G	1	Wheeler & Wilson	10-7	.97			.18	.174
	Totals		12		268	1.09	5	7	.14 to .22	.153 to .24
	Flannel	E	16	Wilcox & Gibbs	337-2	.8	5	11	.22	.176
		F	4	Singer	522-4	1.56	2	2	.15	.234
	Totals		20		859-6	1.14	5	15	.15 to .22	.171 to .250
XIV. 1. Three-piece cuffs run and turned 2. Cuffs stchd. to shirt. 3. One row of outer stchg. on cuffs. 4. Sleeve openings hemmed.	Cotton	G	3	Wheeler & Wilson	69-4	1.56	1	2	.16	.249

TABLE XII—Continued.

Work done	Material	Establishment	Number records included	Machine used	Total dozen made	Average output per hour (doz.)	Number having higher output than the average	Number having output lower than the average	Rate per dozen, cents	Average earnings per hour, cents
XV.										
1. Three-piece cuffs run and turned	Cotton	F	10	Singer	169·6	.8	4	6	.225	.180
2. Cuffs stchd. to shirt.		G	1	Wheeler & Wilson	2·6	.54			.29	.155
3. One row of outer stchg. on cuffs.		K	5	Singer	52·8	.48	3	2	.34	.163
4. Inner sleeve opening hemmed.										
5. Plackets stchd. on outer opening.	Totals		16		230·8	.68	7	9	.225 to .34	.153 to .231
6. Placket finished with point.										
	Flannel	G	4	Wheeler & Wilson	63·2	.75	2	2	.29	.219
		K	4	Singer	89·4	.45	2	2	.35	.158
	Totals		8		152·6	.54	6	2	.29 to .35	.157 to .189
XVI.										
1. Three-piece cuffs run (turning done by another woman).	Cotton (chambray)	A	13	Wheeler & Wilson	245·4	8	6	7	.21 to .22	.164 to .176
	Flannel	A	8	Wheeler & Wilson	39·8	.62	5	3	.22	.136
2. Cuffs stchd. to shirt.										
3. One row stchg. on cuffs.										
4. Placket finished sq., 2 rows stchg.										
5. Felling seam turned.										
XVII.										
1. One-piece cuffs stchd. to shirt	Cotton	A	14	Wheeler & Wilson	262·7	.83	10		.18	.149
2. Edges of cuffs turned and stchd.										
3. Placket finished square, 1 row.										
XVIII.										
1. One-piece cuffs stchd. to shirt	Cotton	F	13	Singer	799·9	1.23	7	6	.12 to .125	.14 to .148
2. Edges of cuffs turned and stchd.										
3 Sleeve openings hemmed.										

Approximately 1½ dozen pair cuffs were made, put on and sleeve openings hemmed in an hour in one firm. When 16 operators in three firms made and put on the cuffs, hemmed the inner opening, stitched on the placket and finished it, the production was .68 dozen shirts. At rates varying from $0.225 to $0.34, 11 out of 16 operators earned less than $0.20 an hour.

On a one-piece cuff when the placket was also finished, the output was .83 dozen shirts per hour in shop "A." At $0.18 per dozen this brought $0.15 an hour. In shop "F" 1¼ dozen pair similar cuffs and hemmed sleeve openings were done in the same time. The rates of $0.12 and $0.125 brought earnings of $0.14 and $0.15.

A Union Special machine is on the market that turns both ends of a cuff as it is run on the sleeve. On 84½ dozen an operator did six dozen pair in an hour. Another operator must turn the edges of the cuff and finish the continuous placket. The production on this was 1.69 dozen, based on four girls' work.

While the rates on particular styles, such as French cuffs, Union Special cuffs and plackets, were ample to produce earnings in excess of $0.20 an hour, the general run of rates in all firms is apparently too low to produce that amount.

TABLE XIII.

Average Output and Earnings per Hour of Piece Workers on Shirts.

Process—Sleeving.

Work done	Material	Establishment	Number records included	Machine used	Total dozen made	Average output per hour (doz.)	Number having higher output than the average	Number having lower output than the average	Rate per dozen, cents	Average earnings per hour, cents
Open sleeves set in shirt	Cotton (incl. chambray, mercerized cotton, when sewed with cotton thread, percales, etc.).	A	3	Union Special 2-needle	565-3	5.7	1	2	.06	.34
		B	3	Union Special 2-needle	167-11	4.9	2	1	.085	.42
		C	1	Union Special 2-needle	110	3.3			.085	.28
		D	2	Union Special 2-needle	312	3.3	1	1	.08	.26
		E	5	Union Special 2-needle	367-8	2.7	3	2	.07	.19
		G	3	Union Special 2-needle	486-9	4.4	2	1	.07	.31
		H	2	Union Special 2-needle	30-9	3.2	1	1	.07	.22
		J	2	Union Special 2-needle	8	2.8	1	1	.07	.20
		K	1	Union Special 2-needle	140-3	4.8			.07	.34
	Totals		22		2,188-7	4.1	8	14	.06 to .085	.25 to .34
	Mercerized cot. sewed with mercer. thd.	A	2	Union Special 2-needle	59-5	3.7	1	1	.085	.32
		E	4	Union Special 2-needle	25-8	2.6	2	2	.08	.21
	Totals		6		85-1	3.3	2	4	.08 to .085	.26 to .28
	Flannel (wool and wool and cotton mixture).	A	2	Union Special 2-needle	57-4	2.4	1	1	.08	.19
		B	2	Union Special 2-needle	10-2	2.4	1	1	.09	.22
		E	5	Union Special 2-needle	814-1	2.5	3	2	.07	.18
		G	3	Union Special 2-needle	291-11	3.9	1	2	.09	.35
		H	2	Union Special 2-needle	266-1	2.7	1	1	.08	.22
		J	1	Union Special 2-needle	43-8	1.9			.11	.21
		K	1	Union Special 2-needle	56-1	2.8			.09	.26
	Totals		16		1,539-4	2.7	4	12	.07 to .11	.19 to .30

SLEEVING.

''Sleeving'' involves setting the sleeve in the shirt body. The sleeve is left open and both pieces of the garment are stitched together on a Union Special two-needle machine, which folds under the raw edges as it makes the two parallel rows of stitching. The operation is the same on all plain shirts.

Twenty-two operators in nine firms show an average output of 4.1 dozen shirts in one hour on cotton materials, an average based on timing the operation on $2{,}188\frac{7}{12}$ dozen. The rates paid are $0.06, $0.07, $0.08 and $0.085. Six cents would produce earnings in excess of $0.20 in all but three factories. In these factories four of their nine operators earned less than that amount with a $0.07 rate.

TABLE XIV.

Average Output and Earnings per Hour of Piece Workers on Shirts.

Process—Felling.

Work done	Material	Establishment	Number records included	Machine used	Total dozen made	Average output per hour (doz.)	Number having higher output than the average	Number having lower output than the average	Rate per dozen, cents	Average earnings per hour, cents
Seams of shirt felled on 2-needle machine.	Cotton (incl. chambray, madras, drills, mercerized cotton).	A	4	Union Special 2-needle	565-6	3.55	1	3	.06 to .085[1]	.213
		B	6	Union Special 2-needle	285-4	4.14	1	5	.06 to .085	.216, .394
		C	1	Union Special 2-needle	48-6	3.73	--------	--------	.08	.298
		D	1	Union Special 2-needle	135-3	2.45	--------	--------	.08	.196
		E	3	Union Special 2-needle	579-2	3.63	1	2	.07	.254
		G	4	Union Special 2-needle	392-4	3.33	2	2	.075	.25
		H	2	Union Special 2-needle	39-10	2.50	1	1	.08	.20
		J	1	Union Special 2-needle	486-9	4.4	2	1	.07	.31
		K	2	Union Special	67	1.03	1	1	.08	.082
		L	1	Singer Special	4	3	--------	--------	.13	.39
	Totals		25		2,184-5	3.21	11	14	.06 to .13	.193 to .417
	Flannel and broadcloth.	A	3	Union Special 2-needle	57-5	1.73	1	2	.08	.138
		B	1	Union Special 2-needle	7-6	3.22	--------	--------	.085	.274
		E	3	Union Special 2-needle	625-4	4.19	2	1	.07	.293
		G	4	Union Special 2-needle	252-6	2.77	2	2	.095 to .10	.277
		H	2	Union Special 2-needle	298-11	2.80	1	1	.09	.252
		J	1	Union Special 2-needle	65-6	2.72	--------	--------	.11	.299
		K	2	Union Special 2-needle	51-6	2.07	1	1	.10	.207
		L	1	Union Special 2-needle	4	2.00	--------	--------	.13	.26
	Totals		17		1,362-8	3.14	5	12	.08 to .13	.252 to .409
	Tub silk (stchd. with cotton thread).	B	2	Union Special 2-needle	32-10	3.94	1	1	.135	.532
		K	2	Union Special 2-needle	14-7	2.13	1	1	.09	.192
	Totals		4		47-5	3.13	2	2	.09 to .135	.282 to .422
	Black sateen	B	2	Union Special 2-needle	62-9	5.02	1	1	.09	.452

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[1] $0.06 rate paid for 10 and 13 stitches per inch; $0.085 for 17 and 18 stitches per inch.

FELLING.

The seams of the sleeves and shirt body are closed on a Union Special two-needle machine with folder attachment. As in sleeving, the raw edges are folded under and two rows of stitching are made in one operation. Work is generally heaped up beside these felling operators so that they may not be delayed in any way. Records of their production on $2,184\frac{5}{12}$ dozen shirts were obtained from ten firms. The average output was 3.21 dozen per hour. The highest average was 4.14, the lowest 1.03 dozen, the latter figure representing a leisurely performance because of slack work. Rates ranged from $0.06 to $0.13 per dozen, a difference in the number of stitches taken accounting for the difference in rates in the same firm.

TABLE XV.

Average Output and Earnings per Hour of Piece Workers on Shirts.

Process—Hemming.

Work done	Material	Establishment	Number records included	Machine used	Total dozen made	Average output per hour (doz.)	Number having higher output than the average	Number having output lower than the average	Rate per dozen, cents	Average earnings per hour, cents
1. Two tails of closed shirt hemmed. 2. Gussets inserted.	Cotton	A	2	Wheeler & Wilson	721-3	6.7	1	1	.04	.27
		B	1	Wilcox & Gibbs	82-6	9.2			.035	.32
		G	1	Wheeler & Wilson	107-10	5.8			.05	.29
	Totals		4		911-7	6.7	1	3	.035 to .05	.23 to .34
	Flannel (with and without gussets).	A	2	Wheeler & Wilson	57-4	4.2	1	1	.055	.23
		E	2	Wilcox & Gibbs	457-9	10.3	1	1	.02	.21
		G	1	Wheeler & Wilson	75-1	8.2			.03	.25
		H	2	Singer	159-8	3.9	1	1	.065	.25
	Totals		7		749-10	7.0	3	4	.02 to .065	.14 to .46
1. Three tails of open shirt hemmed (full length box plait on shirt). 2. Gussets inserted.	Cotton	A	1	Wheeler & Wilson	55-11	3.5			.10	.35
		B	4	Wilcox & Gibbs	253-6	4.7	2	2	.07	.33
		D	2	Standard 81	498-5	4	1	1	.085	.34
		E	2	Wilcox & Gibbs	594-1	9.2	1	1	.03, .05, .06[1]	.346, .363, .422[1]
	Totals		9		140-11	5.4	2	7	.03 to .10	.16 to .54
	Flannel (without gussets).	E	2	Wilcox & Gibbs	684-5	11.1	1	1	.03 to .06[1]	.351 to .51
	Silk (with gussets)	E	1	Wilcox & Gibbs	98-9	10.5			.04	.42
1. Three tails of open shirt hemmed, (front openings to two-thirds length box plait). 2. Gussets inserted.	Cotton	B	1	Wilcox & Gibbs	21-3	3.2			.0925	.39
		C	2	Singer	339-10	3.7	1	1	.0875	.32
		H	1	Wheeler & Wilson	23-8	3.6			.08	.29
		L	1	Wilcox & Gibbs	6	2.0			.10	.29
	Totals		5		390-9	3.65	2	3	.08 to .10	.29 to .37

Flannel (with and without gussets).	B	1	Wilcox & Gibbs	5	4.5	--------	--------	.095	.43
	G	1	Wheeler & Wilson	89-4	7.1	--------	--------	.07	.50
	H	1	Wheeler & Wilson	36-2	2.9	--------	--------	.095	.28
	L	1	Wilcox & Gibbs	10	2.0	--------	--------	.11	.22
Totals	------	4		140-6	4.5	2	2	.07 to .11	.32 to .50
Mercerized cot. sewed with mercer. thd.	C	2	Singer	108-4	2.4	1	1	.10	.24

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[1] Different rates paid to different operators.

HEMMING.

Hemming consists of doubling under and sewing down the edge of the shirt tails and, generally, of inserting gussets at the side seams. The amount of work which this involves varies with the cut of the shirt. A closed shirt has just two tails to hem. An open shirt has three. If the box plait or facing has been run to the end of the shirt, the amount of stitching will not be longer than in the case of the closed shirt, but the operator must adjust an extra piece of cloth and must see that the box plait and button-stand are trimmed to fit in the hem. If the box plait only runs two-thirds the way down the front, the operator on a coat shirt must hem the front openings to the box plait and button-stand. According to Table XV, the output is 19 per cent less on the open shirts with the full-length plaits, and approximately 45 per cent less on the open shirt with the two-thirds-length plaits than on closed shirts. The rates paid by the several firms, while not varying in the same ratio as the output, vary sufficiently to produce higher earnings on open shirts than on closed shirts. Only one firm's average falls below $0.27, that average being $0.20 per hour.

MARKING.

On fine work a girl marks the position of the buttons and buttonholes. She is sometimes paid on a time rate basis, but is often on a piece rate. Her output will vary with the numbers of marks to be made on each shirt—the greater the number of positions to mark per shirt, the less time lost by the operator in handling it. On shirts requiring 13 marks, the output of two operators was 1,241 marks per hour; on others calling for seven marks, they made 491 per hour. As the work is paid for by the hundred, their earnings at the above output and a rate of $0.025 would vary from $0.125 to $0.31 per hour. During the two weeks records were kept, the work was such that they averaged for the entire period 723 marks per hour, or a little more than $0.18 per hour in earnings. This is slightly in excess of the usual time rate paid, which is $8.00 per week or $0.16⅔ per hour.

BUTTONHOLE MAKING.

Buttonholes are made on machines generally equipped with an automatic thread clipper, which cuts the threads as each buttonhole is finished. Some factories, however, still have machines without this attachment, in which case the operator has to cut off the thread between the buttonholes with a scissors.

Buttonhole operators usually make all the buttonholes on the shirt after the shirt has been made. Only the buttonholes on collar points and on neckbands are made before these parts are attached to the shirt. The average output on 349,931 holes was 414 per hour when made on the shirt proper, and 241 (based on making 15,600 holes) when made on collar points.

As in marking, the fewer number of buttonholes on a shirt, the larger is the loss in handling. The number made on the shirt proper ranges from 3 to 17. On cotton the difference in output between bundles calling for 3 holes and for 8 holes was more than 50 per cent in one firm and in another the difference between 10 holes and 17 holes was 48 per cent. Buttonholing is paid for by the hundred and by the dozen shirts, the rates on the 100 basis on cotton ranging from $0.065 to $0.10, $0.08 being the prevailing rate. The average hourly output on all cotton shirts for seven firms was 414. As the lowest rate paid, whether by the dozen or the hundred, on those made was $0.08 per hundred, the earnings were above $0.24. All buttonholes were less than one inch in length, the five-eighths and one-half inch prevailing. It was not possible to measure the effect of this slight difference.

While the records obtained on buttonholes made on flannel and silk were not as great in number as on cotton, the indications would seem to be that the material affected the speed markedly. The average production on flannel was 267 (based on 62,400 buttonholes) and on silk 229 (based on 15,069 buttonholes), or 36 per cent and 45 per cent less than on cotton. Some establishments pay the same rates on cotton and flannel, others pay a cent or two more per hundred. Silk rates are generally double the cotton rate.

BUTTON SEWING.

All buttons are sewed on by machine. The operator inserts the part opposite a buttonhole in the machine, puts a button in the holder, and sets the machine in motion. The machine stitches on the button and cuts the thread.

Most of the buttons used have two or four holes. Sometimes a shirt has one kind or size button on the front and another on the collar, which means that the operator must readjust her machine. The number of buttons on a shirt affects the output in the same way as the number of buttonholes. The difference in production on a 4- and a 13-button shirt was 20 per cent.

While sewing on 180,359 buttons on cotton the output of ten operators in four establishments was 461. The rate was $0.05 per hundred, giving an average earning power of $0.23.

In the two firms reporting on flannel and silk, the outputs were 506 per hour on cotton, 423 on flannel and 445 on silk, or 16 per cent and 12 per cent less than on cotton. No difference is made between cotton and flannel rates; the rate on silk was $0.08 per hundred.

BUTTONING UP.

Figures on this process, which is often paid for at a time rate, were obtained for just one firm. On shirts having four, five and six buttons, the output was 486 buttons buttoned up in an hour, or 560 on the 4-button, 476 on the 5- and 484 on the 6-button shirts. The rates were $0.01, $0.015 and $0.02, respectively, per dozen shirts, producing earnings of from $0.115 to $0.134.

PRESSING.

As this is also more of a time than a piece rate process, the records on this work are not complete. The amount of pressing that can be done in a given time will vary with the complexity of the shirts and with the number of starched parts, but the figures were too few to permit of any analysis of this kind. All that can be said is that in two firms, six pressers averaged 2½ dozen cotton shirts in an hour, while ironing 676 dozen; on flannel the output was 2.15 dozen per hour. The rates on cotton varying from $0.065 to $0.18 per dozen gave earnings of approximately $0.25 an hour. The rates on flannel of $0.12 and $0.15 brought from $0.26 to $0.29 an hour.

VARIATIONS IN OUTPUT ON DIFFERENT KINDS OF SHIRTING.

As there has been no standardization of cotton shirting, there was no way of knowing whether a material used by one firm in making a shirt had the same degree of firmness and weight as a material used by another firm, unless samples of each were compared. This was not possible in a study of this character. As the ease in stitching is not considered by operators to vary much on cotton shirting, all cotton materials, such as chambray, madras, sateen, gingham and mercerized cotton, when stitched with cotton thread, were combined. Black shirting, however, was omitted because black is supposedly harder to work on than white or colors. Mercerized cotton when stitched with mercerized thread was also treated separately. Woolen mixtures, whether all wool or wool and cotton, weighing 5 ounces or less, were grouped together, as were those weighing 7 ounces. As most of this material was flannel, that term has been used in this report, although in a few instances broadcloth is included. Silk is the other material essentially different in character from cotton that is used in shirting.

On single-needle operations, which involve several different pieces of work, such as front, collar and cuff making, the effect of the use of flannel on the output is not clear. Some operators show a marked decreased, others an increased production. For example, the operators in one factory have a diminished output of 11¼ per cent, while those in another factory have an increased output of 22½ per cent on making collars. A careful study of all comparable figures leads to the conclusion that flannel on the whole has only a very slight tendency to reduce production in these operations. In setting the sleeves, sleeve piecing, running plackets, box plaits and button-stands, all of which is done on Union Special two- or four-needle machines, all firms show decreased output, but the diminution varies from 7 per cent to 58 per cent. On felling, hemming, joining and yoking lessened production occurred in all but a few cases.

Silk and mercerized shirts stitched with mercerized thread are made with greater care than flannel or cotton shirts. The differences in production on each are only partly due therefore to the thread used and the quality of the material. The output on both materials was less than on cotton, the largest difference seeming to occur in the two-needle operations. As the records for silk and mercerized thread were confined to a few firms on each operation, they have little value for a detailed comparison of the difference effected in the several processes.

VARIATIONS IN OUTPUT WITH THE NUMBER OF STITCHES PER INCH ON SHIRTS.

Forewomen in a large proportion of the factories were not particular to see that the number of stitches required on a garment had been used by each operator. Examination of shirts supposed to have a certain number of stitches revealed variations of one or two per inch on those made by different operators. Only where the firms were paying different rates for different numbers of stitches was it deemed safe therefore to consider that the prescribed number had been used by all operators.

To ascertain the value of the number of stitches in the several processes, it was necessary that the same operator's records be taken while doing identical pieces of work on the same material with the same thread, and on bundles of the same size. This confined the available figures to a very few women, but limited as the figures are, they indicate that the number of stitches does act as a factor in lowering or raising output. A difference in 10 and 17, and 13 and 18 stitches to the inch made 44 per cent difference in output in one factory and 62 per cent in another on box plaits. Between 13 and 15 stitches there was a 34 per cent difference on box plaits and 14 per cent on cuffs. The difference between 15 and 18 stitches varied from 23 per cent on sleeve piecing to 37 per cent on felling, the rates varying by five mills and two cents, respectively. Apparently, therefore, not only seven extra stitches but two extra stitches to the inch will affect the output, even on processes such as cuff making and putting on, where the time taken to handle the material is as considerable as the time taken to do the stitching itself.

TABLE XVI.

Variations in Output on Shirts with Different Number of Stitches to the Inch.

Part or process	Number of stitches to inch	Size of bundle (in doz.)	Average hourly output (in doz.)
1. Box plait	[1] 10	13-2	16.16
	17	84-6	8.998
	13	164-9	9.738
	15	55-10	6.381
	18	21-11	3.653
2. Button-stand	10	80	12.27
	15	29-9	7.93
3. Cuffs made and on: placket finished	13	82-6	.867
	15	82-6	.749
4. Continuous placket	13	343-6	9.57
	18	25-2	4.646
5. Sleeve piecing	15	641-3	9.66
	18	46	7.46
6. Felling	15	111-5	9.57
	18	100-6	6.09
7. Hemming	15	656-10	6.97
	18	64-5	4.9

[1] Braces indicate different establishments.

VARIATIONS IN OUTPUT ON SHIRTS ON DIFFERENT SIZE BUNDLES.

The several parts of the shirts are tied in bundles. Usually, all single-needle operators and some two-needle operators fetch their bundles, have them checked off at the desk, untie the bundles and count the number of parts, before commencing the sewing. If the bundles made contain but a few dozen shirts, the time lost in these unproductive duties can be doubled or trebled. Just how the difference in the size of the bundle affected the output of the same operators doing the same work on the same material and using the same thread and number of stitches is seen in Table XVII. In each operation there is a noticeable difference in output when bundles having less than three dozen and having four dozen in them are made, the largest difference being 5.6 dozen on the first bundles and 7.2 dozen on four dozen sized bundles.

As there are comparatively few fellers and hemmers to sew together and hem the work done by many single-needle operators, their work is often dumped in a box at their side and when completed is dumped into another box without being tied in bundles or counted until a heap has accumulated. In this way much of the time lost by the other operators is eliminated in the last two occupations

TABLE XVII.

Variations in Output on Shirts on Different Size Bundles.

Size of bundle (dozen)	Military collar on		Extension collar on band		Hems button side, sews on placket		Cuffs on		Felling					
									Firm A		Firm B		Firm C	
	Number bundles	Average hourly output (doz.)	Number bundles	Average hourly output (doz.)	Number bundles	Average hourly output (doz.)	Number bundles	Average hourly output (doz.)	Number bundles	Average hourly output (doz.)	Number bundles	Average hourly output (doz.)	Number bundles	Average hourly output (doz.)
Less than 3	5	1.07	25	1.43	24	2.00	22	5.63	4	5	15	4.23	18	3.64
3 to 4	4	1.16	19	1.39	21	2.51	61	6.57	17	5.33	10	6.27	34	4.12
4 to 5	4	1.84	7	1.72	13	2.55	67	7.23	14	5.44	11	4.4	19	4.36
5 to 6	9	1.75	4	1.76	8	2.36	76	8.60			2	6.67	10	4.73
6 to 7	3	1.30											11	4.40
7 to 8	1	1.75			4	2.61					2	6.0	3	4.5

PAJAMAS, NIGHT SHIRTS AND MEN'S UNDERWEAR.

Seven of the shirt factories make men's pajamas, night shirts and underwear. These articles, however, form a small part of the total goods manufactured. For the most part, the regular shirt operators are called upon to do this work; as they do not handle large quantities of it at a time, their speed is not as great as on the shirt work.

The front work on the pajamas and night shirts consists of putting on the pocket, turning back the button-stand and facing the bosom, or running a continuous facing on bosom, neck and button-stand, and putting on the size ticket. The figures on cotton show that just a little more than one-half dozen fronts can be made in an hour; on flannel the production varied from .46 dozen to .69 dozen. The rates were $0.33 per dozen on cotton and $0.25 to $0.52 on flannel, according to the amount of work. The average earnings on both materials approximated $0.19 per hour, although 13 out of the 19 operators reporting earned less than this amount. A standing collar is sewed on when the neck is not finished with a continuous facing. This is paid for at the rate of $0.14 and $0.18 per dozen, for a two-piece and three-piece collar, respectively, and produced earnings of $0.28 and $0.135 in two firms. The sleeves are finished with an outer facing or wristband. On either piece of work the operators turned out one dozen pajamas in an hour, earnings varying from $0.13 on flannel facings to $0.17 an hour on flannel wristbands. The shoulder joining was done on a single-needle machine in most factories, the girls earning $0.10 to $0.16 an hour. On the hemming, felling, sleeve piecing and sleeving, the operators averaged from $0.24 to $0.38 an hour. Frogs are used in place of buttons, the rates depending on the number to a shirt. Girls earned from $0.16 to $0.41 an hour while sewing them on.

The principal work on the pants of the pajamas is done by one operator. She makes the fly, stitches it on, faces or hems the button-stand, hems the top of the pants and legs and generally joins from the fork to the fly. She receives for this $0.42 a dozen. The production per hour of seven women ranged from one-third to one and one-half dozen. The inseaming and outseaming is done by a two-needle machine operator.

The coat part of men's underwear is made in the same manner as a short neck pajama, except that it has no pocket and the armholes are hemmed. A crotch piece, darts and straps are put on the drawers. The coat work is paid for at rates ranging from $0.35 to $0.435 per dozen and the operators made from $0.19 to $0.25 per hour. The five operators timed made from one-fourth to three-fourths dozen drawers in one hour, earning at rates varying from $0.50 to $0.60 a dozen, $0.15 to $0.465 an hour. The hemming, joining and felling brought earnings similar to those on pajamas.

Although the records for work on these garments were not extensive and therefore not conclusive, the indications are that the majority of operators on the single-needle work can not earn $0.20 an hour, while the double-needle operators can earn in excess of that sum.

CUSTOM MADE SHIRTS.

The custom shirt work varies greatly from the wholesale shirt work. One woman generally does all the work on the custom shirt except the finishing, that is, the making of the buttonholes, sewing on buttons, and embroidering initials. She may pleat the bosom or make the collars and cuffs before beginning on the shirt proper. Fine quality of workmanship is the prime factor on this work, so the operators work slowly. It took two operators each 1½ hours to make one muslin golf shirt. Two others made one flannel shirt, exclusive of the collars and cuffs, in 55 minutes and 1 hour and 25 minutes, respectively. The rates were $3.50 and $4.30 per dozen. The earnings of four operators on the shirts proper varied from $0.19 to $0.35 an hour. On buttonholes, which are made by hand, the earnings of three women varied from $0.15 to $0.35 an hour. One woman made 14 dozen initials, at the rate of $0.25 a dozen, in seven hours.

The largest number of women employed in any of six custom shirt houses visited was 16, the total number in the six, 47.

OVERALLS.

There are three types of overalls which form the basis for all other kinds made for the particular needs in the several crafts. These are known on this coast as the engineers' band back overalls, engineers' high back overalls, and the waist overalls. These garments when made by different firms may look exactly alike, and yet the methods of handling the material and producing the same effects vary widely. Great dissimilarity exists also in the number of parts of the garment made by each operator. In one establishment the body of the overall is completed by one woman; in two others, the front work is done by one person and in the other establishments the work is divided into smaller parts. For these reasons, it was only on the simpler work, such as running seams and hemming bottoms that the figures from the five firms reporting could be combined. As it was not feasible to give the detailed tables of each firm's work, only Table XVIII is given to illustrate the several divisions on the engineers' band back overalls and the resulting earnings.

There is much work to be done on such an overalls. Two front swinging pockets and a watch pocket are made with facings and stitched in the front of the pants. The pockets are closed with an ordinary seam or are serged. A turned fly and buttonpiece are set on either in a continuous piece or in two pieces, and the fly is stitched and tacked. Sometimes the buttonpiece is cut on and hemmed. The pants are turned and double-stitched from the fork to the fly and tacked. The bib is in two pieces, which may be joined on a one- or two-needle machine. A combination patch pocket, made with two or three openings, is stitched on it. The bib is then joined to the pants with a facing. If this is done on the Union Special two-needle machine, it involves but one operation; if done on a one-needle machine, it takes three operations. The edge from pants opening to opening, including the sides and top of the bib, is hemmed and the buckle loops inserted. Sometimes the top of the bib is faced. The back of the overalls from seat to waist is joined. The hip patch pockets, rule pockets and brush straps if double-stitched are put on with a two-needle machine. The waistband is cut in one piece and stitched on with a special machine in one operation, and the side openings are faced. Buckle straps and suspenders must be made and sewed or buttoned on. The in and out leg seams are run and the bottoms hemmed. Buttonholes are put on flies, bands, suspenders and pockets, and patent buttons are riveted on. Pockets and suspenders are barred. The garment is then inspected, folded and boxed.

The work on the high back overalls is the same except in the finish of the back, which is cut high and has cloth suspenders cut on or stitched to it. When the back is cut in one piece, the suspenders and back may be hemmed in one operation, the other side of the suspender being turned under and stitched. The straps are held together with diamond-shaped stitching. The waist overalls has neither bib nor suspender. A waistband runs around the top.

TABLE XVIII.

Average Output and Earnings per Hour on the Different Operations of an Engineer's Band Back Overall Made of 2-20 Denim.

Operations on—

FRONTS.

1. Sew silesia to watch pocket and facings for 2 swing pockets.
2. Tacks to waist.
3. Hems button pieces.
4. Stitches fly.
5. Sets in swing pockets, 2 rows stchg.
6. Sets on turned fly, stays top and bottom.
7. Joints from fork to fly with dble. stitch.
8. Seam bibs: (a) on U. S. 2-needle machine; (b) Singer 1-needle machine.
9. Stitches combination bib pocket.
10. Joins bib to pants: (a) on U. S. 2-needle machine; (b) Singer 1-needle machine.
11. Hems from opening to opening or hems sides and faces top of bib, inserting loops.
12. Serges front openings and pockets.

BACKS.

13. Double stitches 2 hip patch and 1 rule pocket on 2-needle machine.
14. Joints from waist to crotch seam on U. S. 2-needle machine.
15. Runs on waist band cut solid.
16. Faces side openings.
17. Sews on buckle strap and size ticket.
18. Running extra stitching on band.
19. Runs suspenders.
20. Inserts rubber in suspender ends, turns down block and tacks with loop.
21. Puts buckle and wire pieces on suspenders.
22. Makes buckle straps.
23. Runs outer leg seam on U. S. machine.
24. Runs in seams of legs on U. S. machine.
25. Hems bottoms.
26. Makes buttonholes.
27. Bare suspenders and pockets.
28. Rivets on buttons.

Operations done	Number individual records included	Total dozen made	Average output per hour	Rate per dozen	Average earnings per hour
1 to 4 incl.	1	3	1.71	.10	.17
5 and 6	1	3	4.50	.05	.225
7	1	3	2.4	.08	.192
1 to 7 incl.	16	514	1.00	.31	.31
8	1	3	9.91	.02	.198
9	[1] 1	3	5.14	.055	.283
	4	1,103-2	3.96	.08	.32
10	1	3	3	.06	.18
	1	519	9.56	.05	.48
11	1	3	2	.08	.16
	9	621	1.74	.16	.28
1 to 11 incl.	9	124-2	.624	.615	.38
	3	40	.457	.575	.263
12	1	3	14.4	.03	.43
13	1	3	1.71	.12	.206
	5	158-5	2.22	.12	.266
14	1	3	9.91	.03	.297
	2	167-6	5.55	.03	.167
	1	15	5	.03	.15
15	1	255	6.91	.055	.38
16	2	360	6.23	.05	.31
15 to 17 incl.	1	3	1.33	.16	.213
16 and 17	10	570	1.58	.15	.237
17 and 18	1	135	6.30	.07	.44
19 and 20	5	80	2.32	.11	.255
21	1	118-9	13.69	.02	.274
20 and 21	1	16	.414	.16	.66
22	1	42	4.2	.03	.126
23	1	3	5.2	.08	.416
	2	127	3.2	.105	.34
24	1	3	4	.07	.28
	1	36	4.5	.07	.32
23 and 24	7	270-6	1.94	.17	.33
25	1	3	3.59	.05	.18
	1	129	4.15	.06	.25
	22	401-6	2.54	.06	.15
26	2	[2]15,995	[2]428.2	[3].09	.39
27	3	[2]24,864	[2]628.9	[3].05	.314
28	1	[2]13,020	[2]985.1	[3].03	.30

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[1] Braces indicate figures are for more than one firm.

[2] Total number made.

[3] Rate per hundred.

The parts and processes that vary in making overalls are the number and size of pockets, the manner of inserting and forming them, the number of stitchings on them, the kind of fly, the edge finish, manner of making buckle straps and suspenders and the manner of running seams and joining parts. As the variations occur almost entirely in different factories or in the same factory on work divided differently, it was not possible to measure their effect on output. As seen in Table XVIII, the range in earnings of different operators on different parts was from $0.13 to $0.66 an hour. Both figures are unusual, the majority of operators earning from $0.18 to $0.30 an hour. On the three kinds of overalls, the first process in front making, sewing the watch pocket and the facings to silicia, tacking the two pieces to the waist and stitching on the fly and buttonpiece, brought less money to operators in one factory than any other operation. Four different operators were timed on this work and their earnings were $0.16 and $0.17 an hour. Where the entire front was made by one operator on a single-needle machine, the earnings varied from $0.26 to $0.38 in the two factories. Waist overalls made complete by 24 women brought average earnings of $0.194 an hour to all, the highest individual earnings over a period of one week being $0.26. Of the 253 women, whose records were obtained, 24 per cent earned less than $0.20 an hour for the period covered. They were employed at front-facing or front-trimming, making suspenders and straps, hemming, sewing on back pockets or making the entire garment. The average earnings on processes on overalls do not show the extremes that were seen in shirts.

PANTS.

The factory-made pants are usually made of khaki, corduroy, whip cord, fustian or duck. There is a tendency to have all the one-needle work done by one operator, even though the rates are fixed for work on fronts, backs and finishing. The timing was done on the several parts.

On fronts cut-on or stitched-on facings are joined to the side pockets, a watch pocket is inserted, a silicia-lined fly, with both sides turned, is run on and tacked at the three buttonholes and the top and bottom, and the pants are joined from fork to fly. When this work was done on khaki, 818 dozen was the average output of 26 operators. At the rate of $0.42 they earned $0.344 an hour. All made more than $0.20. On corduroy the pockets were also formed, but the pants were not joined at the fork. Six girls made .46 dozen and earned $0.235 an hour, one making $0.12¼. The duck pants had a patch watch pocket. The output was .55 dozen, the earnings $0.24 an hour.

Two hip pockets are inserted by the back operators, darts are stitched from pocket to waist, and buckle straps put on. On 101 khaki pants 23 women made two-thirds dozen in an hour. At the rate of $0.44 per dozen, their earnings approximated $0.30 an hour. Two of the 23 earned less than $0.20 however. On the same work on corduroy (tickets were also stitched on) five other operators made .45 of a dozen or, at a $0.49 rate, $0.22 an hour. On this also two women earned less than $0.20. When flaps were made for the pockets, the output was .35 dozen, the earnings $0.24.

''Finishing'' signifies a number of processes. On khaki pants a four-piece band was run on, the band catching the pocket facings and the inserted belt loops. The loops were tacked at the bottom and tickets sewed on. A little more than one-half dozen were ''finished'' in an hour. The average earnings were $0.28. Only two out of the 19 operators timed made less than $0.20 an hour. On the corduroy pants, a curtain was stitched, pocket facings caught, four tunnel loops made and put on, and the in and out seams of the legs, the back and fork-to-fly seams run. Nine women averaged .264 dozen while making 179 dozen, earning $0.33 an hour. Only one woman made less than $0.20.

In and out seaming khaki on a Union Special machine brought earnings of $0.35 an hour to two operators. Hemming the legs with a three-inch hem and tacking the cuffs at the seams gave $0.29 on khaki, plain hemming on duck, $0.27. Pocket sewers earned from $0.27 to $0.49 an hour.

The operators on khaki pants who earned less than $0.20 on backs and finishing earned in excess of $0.30 while making fronts, so that their average on all parts was above the $0.20 standard. The three operators on corduroy having low average earnings did not work on the several parts. It is obvious that the rates on khaki will yield earnings nearing the $0.30 level while the rates on corduroy will mean earnings nearer $0.20.

COATS.

The principal coat made in the overalls factories is the denim engineer coat. Four factories visited, specializing on white goods, however, made white duck and drill coats for cooks, bartenders and barbers. The work on the denim and white coats is the same as regards the essentials. Straight front facings are run on and stitched; a one-piece straight collar is made and put on, and patch pockets, generally three in number, are run on. The sleeves, in one or two pieces, have a hem, a turned back facing or a one-piece band at the wrist. The shoulders, the back, the sleeves and the sides are joined, the sleeves set in and the bottom of the coat hemmed.

In the large overalls factories different systems are employed in the subdivision of the work. In one, sleeve and body seaming are done on two-needle machines, but all other operations are done on one-needle machines, and the same operators handle all the one-needle work. As this is the largest part of coat making this system closely approaches having the operator make the entire garment. The average hourly earnings of these operators for all the one-needle operations in making medium grade white duck coats was $0.27. The separate operations did not produce equal hourly earnings but ranged from $0.35 to $0.14. Only one operator fell below $0.20 per hour for all work done.

In two factories, fronts are made on two-needle machines. The average hourly earnings in one factory was $0.28 and in the other $0.21, no operators earning less than $0.20 per hour. Sleeve and body seaming (two-needle operations) was done by different operators. With the exception of one operator on underarm seams, whose average on a limited quantity was $0.43, all earned an average hourly wage of from $0.29 to $0.40. In collar making the records of three factories show average hourly earnings of $0.218, $0.22 and $0.239. Only one operator fell below $0.20 per hour, receiving $0.19. Hemming of coat bottoms brought earnings of $0.25 on white drill and $0.18 on denim to the one operator who was timed.

The records in one establishment in which operators make the entire garment, show five styles of medium grade white duck and drill coats (cooks, bar and barbers), produced at average hourly earnings of from $0.24 to $0.29. On the cheapest grade of coat three operators fell below an average of $0.20 per hour, making respectively $0.19 and $0.18 and $0.17 per hour.

The operator earning $0.17 on this grade earned $0.26 and $0.28 per hour when working on high grade garments. On high grade trimmed coats the operators average $0.33 per hour. The amount produced at less than $0.20 per hour represented 9.3 per cent of the total output upon which records were kept.

EARNINGS OF INEXPERIENCED BEGINNERS IN THE SHIRT AND OVERALLS INDUSTRY.

It is the contention of employers in the shirt and overalls industry, that a knowledge of sewing obtained at home, in dressmaking or tailoring shops, is of little or no value to a woman entering a shirt or overalls factory. Such experience has taught the woman hand sewing and how to do careful machine work on small numbers of garments. The environment of a large factory—handling large quantities of garments, working on one process, and the high speed demanded—are entirely new to such a worker. Some superintendents say it is easier for girls with no knowledge of sewing to learn the factory work than for women whose training has developed characteristics that are hindrances to speed.

The parts that beginners were given to make varied considerably in the several factories. On shirts—fronts, yokes, joining and plackets were taught first. On overalls—bibs or suspenders were hemmed, back pockets stitched on and front pockets faced. In some factories, the girls are switched from part to part rapidly, in others they are left on one operation until they have acquired speed. Teachers whose only duty it is to teach beginners are sometimes provided. When such is not the case, the forelady or an operator acts as teacher. The latter arrangement is given as the reason by many girls for their slow progress, as they say the forelady has too many other things to do to be a good teacher and that operators are unable to impart their knowledge to others.

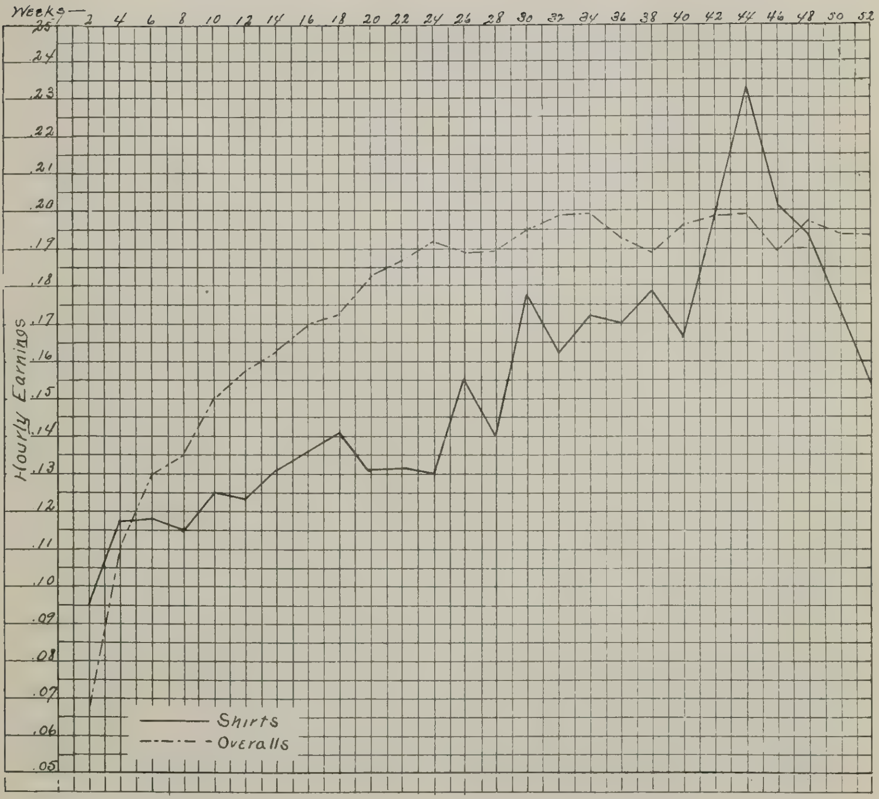
To ascertain the progress of beginners who had had no experience in the making of shirts and overalls, the earnings and hours with each week's experience of all who entered the industry between October, 1914, and November, 1915, were taken. As 1914 and the early part of 1915 was not a good business period, the beginners taken on were few. For the first week's employment records were obtained for 90 women in shirts and 165 in overalls, but only three shirt and 57 overalls operators had had 52 weeks of employment by November, 1915. Unfortunately only three out of the six shirt and two out of the six overalls establishments taking on new people, kept records of the hours employed. This limited the number whose *hourly* earnings could be traced from week to week to 41 shirt and 36 overalls workers. The curve of weekly earnings for all has been inserted however as indicative of what a girl's first year's experience represents in money.

During the first two weeks the 41 girls starting on shirts averaged a little more than $0.09 an hour. Their earnings increased almost steadily until they reached $0.14 during the 18th week. From that time on there were numerous dips in the curve, occasioned by transferring the girls about from part to part. The $0.20 an hour level was not reached until the 42d week and then it was maintained for only six weeks. The few women represented after the 33d week make the last part of the curve of little significance, however.

In overalls, the improvement, as shown by the rates, was almost steady up to the 32d week. Beginning at $0.067 an hour, the earnings double themselves at the sixth week and the curve is gradually upward until $0.198 is reached in the 32d week. This amount is not exceeded during the year, but the level is maintained for most of the remaining 18 weeks.

It is evident from these curves that the overalls beginner takes longer to grasp the work than the shirt operator, but having once grown accustomed to it, her speed increases faster and more steadily. She reaches her high point in the 32d week while the shirt operator does not reach the same point until she has had ten more weeks of experience.

It is the custom in one firm to pay the girls a time rate plus anything more they might earn for the first two weeks, in another to recognize certain steps in the development by a bonus. In the majority of factories the girl is paid only what she makes on a piece rate.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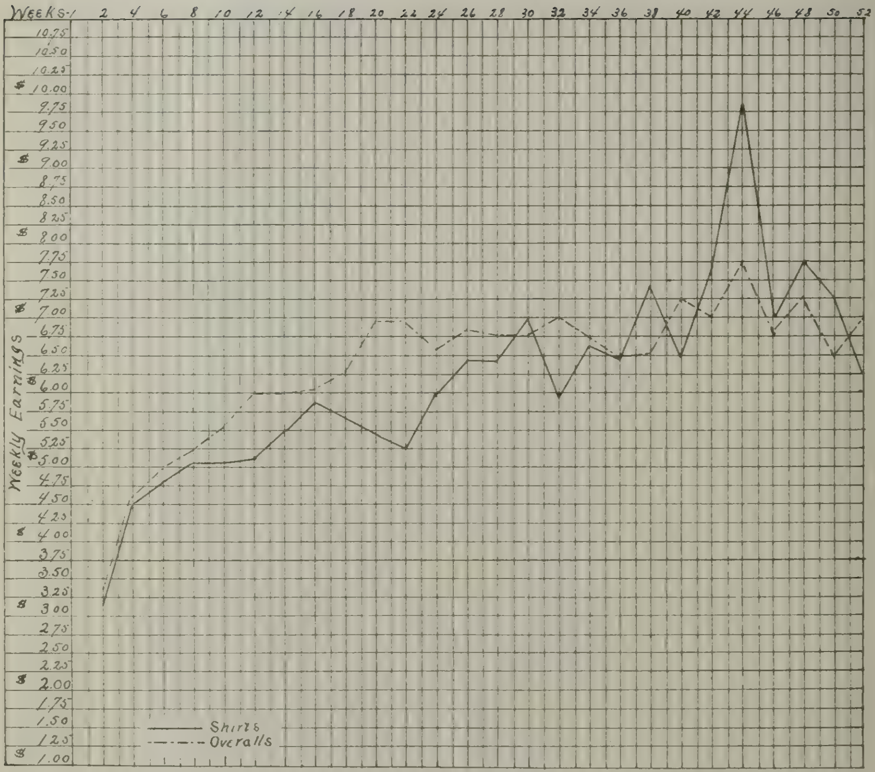
Shirts
Overalls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THE RATES OF PAY OF TIME WORKERS IN THE TWENTY-FOUR FACTORIES.

The largest group in any occupation paid at a time rate were the inspectors or examiners. The 58 received an average weekly rate of $9.72. Twenty received less than $9.00. The 55 women employed in pressing the garments (some of whom also did starching) were paid an average rate of $9.42 per week. Boxers and folders were paid a little over $10.00. Foreladies and teachers received average rates of $16.72 and $11.63, respectively. The stampers, button sewers and buttonhole makers received the lowest average rates. Only one girl out of the 219 time workers got under $6.00. Practically 30 per cent got under $9.00.

TABLE XIX.

Number of Women Employed on a Time Rate Basis in Shirt and Overall Factories Receiving Classified Weekly Rates of Pay.

Occupation	Number of women receiving classified weekly rates of pay									Average
	Under $6.00	$6.00 to $6.99	$7.00 to $7.99	$8.00 to $8.99	$9.00 to $9.99	$10.00 to $10.99	$11.00 to $11.99	$12.00 and over	Total	
Inspecting			1	19	14	7		17	58	$9 72
Pressing and starching		1	4	19	12	6	5	8	55	9 42
Foreladies and assistants						1		28	[1]29	16 72
Folding and boxing		1	1	3	5	3	1	6	20	10 09
Operating	1	2			3	2	1	2	11	9 05
Button and buttonhole making			1	4	3	1		1	10	8 86
Stamper		2	2	1	3	1			9	7 89
Teacher					1	4		3	8	11 63
Desk girl			2		1	3		2	8	9 63
Repairing, trimming, damaged cutting		1			2	1		2	6	9 67
Total number	1	7	11	46	44	29	7	69	[1]214	$10 54
Per cent	.5	3.3	5.1	21.5	20.6	13.5	3.3	32.2	100.0	

[1] Not including five whose rates of pay were not reported.

CAUSES OF LOST TIME IN THE WORKROOM.

California employers and employees are almost as one in the preference of the piece as compared with the time rate basis of payment. The main reason this system meets with the employer's favor is because he is paying for visible output only; time wasted by his employees is not done at his direct expense. The employee likes it because she thinks she gets what she earns, and has the satisfaction of knowing that if she does twice as much as her neighbor, she gets twice as much pay. The ever-existent contention under a time rate system—partiality to some, unfairness to others in fixing individual time rates—is thus avoided. Again, the California operator believes she has more freedom under the piece work system; she can supposedly come when she likes in the morning, take time off during the day and leave at night when she desires, without asking permission. Obviously, if this feeling of freedom were indulged in extensively the factory could not get its work out, and the girls could not earn enough to support themselves. It is, however, a source of complaint on the part of the employer.

The equality of the gain to employers and employees through the piecework system is questionable. Bad organization, mismanagement, imperfect machine repair, poor belting, poor thread, no power, tell directly upon the girls' earnings, and only indirectly upon the employers' profits. In some factories, for example, operators who stitch several parts of the garment together, such as girls putting on collars or cuffs, must look in the bins for the two bundles of parts that will match. As each bundle has been put in by a different operator at a different time, this may consume several minutes. At times one of the parts may not be finished, either because it was not given out early enough or because the operator has been slow in completing it. The operator who is to stitch them together must therefore wait for the missing parts to be finished or be told to take another bundle. This waste is avoided in other factories where the parts to be stitched together are tied together or are brought to the operator, and where the books show just where each part is at any time so that the forelady does not assign parts to be sewed that are not ready.

A persistent source of puzzle and complaint from employees in one factory was that they had no sooner learned one operation than they were transferred to another, thereby lowering their earning capacity until they had gotten speed in the new operation. One girl said "the management may want the girls to know all kinds of work so that they may be quickly changed if the occasion demands. This may be an advantage to the firm, but it is a decided disadvantage to the girls."

To know definitely the amount of time lost through the more tangible causes, some of the operators on each part in three factories kept a daily record over a period of two weeks of all time lost and the causes therefor. These records may not be representative of the industry as a whole, but they are indicative of conditions in some factories.

TABLE XX.

Number Pieceworkers in Three Shirt and Overall Establishments Reporting Lost Time While in Workroom and Reasons for Same.

Department	Total number women reporting	Total reporting lost time		Total hours in factory workroom	Hours lost		Reasons why time was lost									
							Waiting for work		Waiting for machine to be repaired		Repairing belt		Adjusting thread on machine[2]		Miscellaneous reasons[3]	
		Number	Per cent		Number hours	Per cent of time in factory	Number reporting	Average hours lost	Number reporting	Average hours lost	Number reporting	Average hours lost	Number reporting	Average hours lost	Number reporting	Average hours lost
Shirts	92	72	78.3	6,609′ 2″	462′ 55″	.07	50	4.098	40	3.57	24	1.23	2	1.05	33	2.59
Overalls	66	54	82.0	[1]4,684′ 38″	435′ 57″	.093	30	9.28	29	3.51	16	.63	7	2.71	15	1.79
Pants	14	10	71.4	787′ 10″	33′ 55″	.04	6	2.83	4	2.29	4	.73	--------	--------	3	1.61
Totals	172	136	79.1	[1]12,080′ 50″	932′ 47″	.077	86	5.8	73	3.47	44	.97	9	2.35	51	2.30

[1] One woman did not report the hours employed.

[2] Includes breaking of thread.

[3] Includes power off, no light, settling pay card disputes and sorting bundles.

Out of the 172 operators keeping records, 79 per cent reported some time lost that was incidental to the work done, and not due to personal reasons. These 136 operators were each in the factories 89 hours. The average time per person lost during this period was 6⅞ hours or a little less than one-half a day during a 5½ day week. The greatest source of delay was caused by waiting around for work. Eighty-six women had to wait for their work losing thereby an average of six hours. A little less than half lost time while waiting to have their machines repaired. The amount lost varied from 20 minutes to 12 hours per week, the average for all being 3½ hours for the entire period. The ten operators who lost more than eight hours from this source were employed on buttonholes, buttons, barring and Union Special machine operations. As all this work is done on special machines, it is seldom that factories have an idle one that could be used while the girls were waiting. Some of the time lost by one-needle sewing machine operators could have been avoided, superintendents said, if these women had cleaned and oiled unused machines and operated them until their own were ready. As an operator does not know how quickly her machine may be in order, probably few will do this extra work, unless told to do so by someone in authority.

The other vital causes that contributed to swell the lost time, were broken belts, thread and needles, no power, and no light.

The factory productivity is lessened by all these delays and the firm, therefore, is affected, but because the effect is indirect, its officials may not be conscious of the causes of the lessened output. The employees on the contrary feel keenly the smaller pay checks.

HOURS.

The nominal hours in the 18 factories were either 48 or 44 per week depending upon the amount of work on hand Saturday noon of each week. By "nominal hours" is meant the hours during which the power was turned on. The factory doors are open in all but two establishments for a period longer than 15 minutes before the power goes on. There are several operations that operators must do that do not require power, such as turning cuffs and collars, nicking collars, numbering parts of the overalls, turning overalls pockets, trimming apart the parts of the garments and cleaning machines. The union forbids its members to be at work before the power goes on, but unless the employers cooperate to keep an eight-hour day by locking workroom doors, operators anxious to have a big day will come before the nominal time set. From time-clock cards obtained, where doors were not locked, it was seen that a third of the workers got to the factory about 30 minutes before the power was turned on. Some, of course, did not start work immediately, but judging from one day's visit, most would begin as soon as the outer wraps had been removed and the aprons put on.

Here, too, must be mentioned the fact that two shirt houses give operators the collars and cuffs to turn at night in their homes during the busy weeks.

SANITARY PROVISIONS.

Adequate lighting is particularly necessary in garment factories, because of the exacting visual demands of the occupations. The natural illumination, coming often from three sides, was sufficient to light the center of the workrooms on any clear day. Operators sit on opposite sides of the machine tables; those facing the windows generally wear shades to protect the eyes from glare effects.

With windows frequently on three sides, the facilities for natural ventilation were abundant. In the winter days, however, most of these were closed. The lint from the overalls denims added to the impurity of the air. Heating was insufficient in some places to warm the very large workrooms.

The operators in all factories were seated on chairs having backs. These chairs are similar to the ordinary kitchen chair and do not permit of any adjustment to the individual's size. As the workers sit back to back, chairs of this kind would be pushed back when the undrilled operator was getting up at a fire signal and would block the aisles dangerously.

Skirts are protected from the machine shafting to some extent by oilcloth or other material tacked to the sewing table. The Industrial Accident Commission has recently ruled that all such shafting is to be boxed on all sides. The blue dye on overall denims comes off onto the hands; this is disagreeable but seemingly not dangerous unless there is an abrasion. Overalls bundles are heavy. Each factory employs a man or boy to carry the work to the operators. As, however, the boy can not often be gotten the minute a woman is ready for more work, most women prefer to get their own bundles rather than wait for the load to be brought to them. Carrying of heavy bundles could only be avoided without loss to the operator where there is enough work to have it systematically heaped in the box at each operator's side.

Lunch rooms were provided in the newer factories; some had cafeteria service.

SUMMARY OF REPORT ON THE EMPLOYMENT OF WOMEN ON SHIRTS, OVERALLS AND KINDRED GARMENTS.

The 24 establishments manufacturing shirts, overalls and other workingmen's garments for the wholesale and custom trade employed 1,781 women at the close of 1915. A little less than two-thirds of the employees were governed by union regulations. The piecework system, whereby a rate is paid for each dozen parts of the garments made, prevailed. There was no standard rate for any given piece of work in this industry, the prices varying widely, at times, in the several factories. The individual and the average production in a given time was also very different. The records obtained on hourly outputs and rates show that in most of the establishments the basic rates, that is, the rates on the simplest garments made, were too low to net the average operator earnings of $0.20 an hour on eight out of 18 processes in shirt making. The amount of extra work on the more complex garments had been well approximated in the scale of rates, but with the base incorrect the rates can not be sufficient at any point. As these eight occupations give employment to 60 per cent of the women working on shirts, the earnings for many were below $0.20 an hour. On overalls about 24 per cent of the number reporting made less than $0.20 an hour. The records indicate that the hourly earnings of pants operators fall between $0.25 and $0.30. These earnings are for the time when a girl is actually engaged in making her part of the garments. When time is lost, these amounts will not be earned each hour during the day. About four-fifths of the women keeping records in three factories reported lost time while in the factory amounting to a little less than half a day in a five and one-half day week. The main causes of this loss of time were the breaking of machines or belts and waiting for work.

Even though all such lost time is entirely at the employee's expense on a piece rate system, almost all women, as well as all employers, prefer this method of payment to a time rate system. This attitude and the fact that a time rate system has never been tried out on a large scale in this branch of the industry, makes doubtful the effect of the introduction of such a system in California. The existence of keen competition with the East and Middle West where labor cost is measurably less, and of destructive competition from prison and contract labor, necessitates that careful consideration be given the subject before any abrupt changes are made in the industry.

From the shirt data collected for this report a piecework schedule of minimum prices for regulating operations *could* be formulated which would apply throughout the industry regardless of style or minor variations and would produce a minimum sum per week for the average operator. To make such a scale of prices satisfactory to all many conferences with both employers and employees and continuous study would be essential. The rulings based on piece rates would be difficult of enforcement. The figures obtained on overalls do not indicate just what the rates on each part should be to yield a given amount, because the work on overalls is divided to such an extent that the value of the work on the several parts could not be known. Any prices set on parts would, therefore, have to stand the test of time before their earning power could be learned. Piece rates applied throughout the industry, that would insure adequate earnings for most experienced women, would necessitate increases where none such were needed, because of the wide differences in factory output. For example, a rate of $0.09 per dozen, may produce earnings of $0.15 an hour in one factory and $0.30 an hour in another. To raise the $0.15 earnings to $0.20, a $0.12 rate would be necessary, although $0.09 is a sufficient rate for the second factory.

If the sum of money that a girl should earn in a given time were fixed and her hours reckoned from the time she entered the workroom until she left it for the day, deductions being made for the luncheon period and other periods of one hour or more during which she was absent from the factory, her earnings would be safeguarded against inadequate piece rates as well as against lost time in the factory. Each employer would be free to determine his own piece rates as long as the yielding power of such rates coincided with or was greater than the stipulated amount to be earned in the stipulated time. If careful records were kept of each employee's hours and earnings, no difficulty would be encountered in the enforcement of such regulations.

The piece rate earnings of beginners in this industry indicate that it takes 32 weeks before $0.20 an hour can be earned on overalls, and 42 weeks before the same amount can be made on shirts by the average girl, as the industry is now organized.

THE EMPLOYMENT OF WOMEN IN THE MEN'S READY-MADE AND CUSTOM-MADE CLOTHING INDUSTRY OF CALIFORNIA.

The men's clothing manufacturer in California is essentially a custom tailor. Although a relatively small amount of the cheaper ready-made clothing is manufactured in San Francisco—the garments being given out by the wholesaler to Chinese contractors to make up—the bulk of the business is of the made-to-order character. As the field of the custom tailor is necessarily of a local nature,[6] the California trade does not feel the competition of Eastern and Middle Western manufacture directly. The growing popularity of the high grade ready-made, coming to the Western market from Chicago and more Eastern points, is, however, considered a growing menace to the custom trade on the Pacific coast.

The man known to the public as the ''custom tailor'' is in many cases more a merchant than a manufacturer. He purchases the raw materials that go into the making of the garments, takes the measurements for particular garments, sponges and cuts the materials on his premises, but sends out the several parts of the suit to contractors to make up. When the completed coat, pants or vest is returned, it is examined and defects corrected by his own men. This type of tailor employs no women in the handling of the garment, and therefore enters into the problem of the woman worker only because work comes directly from him to the man who does employ women. The contractor, or the man who contracts to make up his coats, overcoats, vests or pants for a given price, is an independent employer, serving one or many wholesalers, but entirely free to employ whomsoever he will and at whatever terms he sees fit. He alone, therefore, can be held responsible for the women employed in his shop. A shop in which the parts of the garment are made up but which does not take orders and cut garments, is known as an ''outside shop.'' When the order is taken, the garment cut and made in part [7]or whole under the direct supervision of one firm, the shop is called an ''inside shop.'' The importance of this twofold organization upon the problems of employment will be evident throughout this report.

The investigation into the employment of women and children in the men's ready-made and custom-made clothing industry embraced the three cities of Los Angeles, Oakland and San Francisco. One hundred and sixty-five establishments were visited, but only eighty-five employed women. All firms in Los Angeles were included in the study, and all employing six or more women and a representation of the smaller firms were covered in Oakland and San Francisco. The exact proportion of establishments or women engaged in the industry covered by this study in the latter cities can not be stated as time did not permit the compilation of a complete list of women-employing tailor shops.[8]

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[6] A mail order business with neighboring states has obtained a small footing in San Francisco.

[7] Several inside shops only manufacture the coats, the most particular part of the garment, in their shops.

The main object of the investigation was to ascertain the present system and rates of payment to women and minor employees, their hours and weeks of employment, and their subsequent earning power in this industry. A transcript of the pay roll from October 1, 1914, to October 1, 1915, was, therefore, made by the commission's agents.

Entire or partial lack of pay roll records for 66 of the 85 firms employing women limited the figures on hours, weeks employed and earnings to 19 establishments employing 344 women during the year. These included all the large firms and some of the smaller ones, and seemed fairly representative of conditions within the industry. The system and rates of pay were obtained for the 582 women in the 85 shops.

In the three cities there were 68 outside and 17 inside shops, employing 372 and 210 women, respectively, during the year or in October, 1915. The inside shops are the bigger establishments, the largest in San Francisco employing 28 women in September, 1915, the largest in Los Angeles employing 35 women. Their force is not, therefore, as adjustable as in shops that seldom employ more than five women. In dull seasons, rather than disorganize the factory, the inside shops will offer special rates on suits to customers, thus maintaining the level of employment for the large percentage of employees. The contracting shops visited employ from one to 11 women. Not having an intimate knowledge of the trade conditions, and often doing work for several merchants, they must adjust the force from day to day to suit immediate demands. This produces great irregularity of employment, a condition which is heightened when the number of contractors exceeds the demand. When not held down by union regulations, such a condition leads to underbidding and its concomitant, decreased wages. In San Francisco, however, only seven out of the 31 contract shops were not unionized. These employed less than one-fourth of the women. In Los Angeles the closed union shop does not exist, although there is a union of approximately 250 tailors. The union is not strong enough at present to affect the women's status.

The shops engaged in the manufacture of men's custom-made clothing in California are too small to permit of extensive subdivisions in the work done. The majority of the women employed are called "finishers." Finishing is a vague term, covering a great variety of processes, all of which are required of each woman in some shops, while in others but a few are included in her work. Finishing on coats, in its broad sense, includes felling the under- and over-collar to the coat, felling the lining to the collar of the coat, felling the lining at the shoulder seams and the armholes, felling the cloth and the lining to the cloth at the bottom of the coat, sewing on buttons, making buttonholes, sewing on hangers and labels and pulling bastings. Only two women were found operating machines in the making of the sleeves and body of the coat: Usually the machine operating and basting are done by men. On pants, finishing includes basting and lining to the seam of the waistband, felling it to the cloth, felling the leg-bottoms, sewing on hangers, putting buckles on the buckle-straps and removing threads. In Los Angeles some women make the pants complete. On vests, women often do all the basting and lining, felling, buttonholing, sewing on buttons, and very frequently do machine work. When apprentices are taken in, they begin on processes requiring the least skill. As the shops are not large enough to employ girls to pull bastings or to sew on buttons only, when untrained help is taken on, the employers try to obtain women with sufficient knowledge of the sewing craft to grasp the several parts of the work quickly. Consequently, there are practically no minors employed. During the year covered in the investigation, only 21 apprentices were taken on in San Francisco and 12 in Los Angeles, and most of these women were employed but a short time.

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[8] This would have necessitated visiting a large number of shops scattered throughout these cities with a view to ascertaining whether or not women were employed. Attempts to obtain this information by mail in the previous year by the State Bureau of Labor had proven unsuccessful.

While some of the work which women are engaged in necessitates standing at a table, for the most part they sit down during the entire day. Good light is one of the requisites in their work. The buildings which house the outside shops and some of the inside shops are frequently structures put up for office purposes. While the rooms occupied by these factories were not meant for manufacturing purposes, light and ventilation, as a whole, were good.

TABLE XXI.

Number and Per Cent of Women Paid on a Time and Piece Rate Basis Employed in Inside and Outside Shops in the Men's Ready-made and Custom-made Clothing.

City	Type of shop	Time workers		Piece workers		Total	
		Number	Per cent	Number	Per cent	Number	Per cent
San Francisco and Oakland	Inside shop	137	97.9	3	2.1	140	100.0
San Francisco and Oakland	Outside shop	135	75.0	45	25.0	180	100.0
Los Angeles	Inside shop	36	51.4	34	48.6	70	100.0
Los Angeles	Outside shop	150	78.0	42	22.0	192	100.0
Totals	Inside shop	173	82.4	37	17.6	210	100.0
Totals	Outside shop	285	76.6	87	23.4	372	100.0
Totals		458	78.7	124	21.3	[1]582	100.0

[1] This includes 344 women employed during one year in 19 establishments and 238 women employed in October, 1915, in the 66 establishments having no back records.

In the three cities, nearly four-fifths of the 582 women workers in the men's clothing industry were paid on a time rate basis. A detailed study of the piece rate system was, therefore, not made. This proportion was somewhat larger in the inside shops and larger in San Francisco than Los Angeles. Any minimum time rate put in this industry can also be made to apply to the pieceworkers by requiring that no person may earn less than the minimum amount for specified hours of service.

The 458 time workers employed in the 85 shops visited would have each received an average rate of $11.30 per week had the rates of each been equal. As it was, a fifth were paid less than $9.00. This proportion was the same in each city and in both inside and outside shops eighteen were found at work for less than $6.00. More than two-thirds (70%) received $10.00 or over per week. San Francisco had relatively more high paid people than Los Angeles.

The outside shops paid higher rates in San Francisco than did the inside shops, but the reverse was true in Los Angeles, so that the average weekly rate of pay for all the inside shops was $0.31 higher than in the outside shops, the first being $11.49 and the latter $11.18. The proportion of women in the lower rate grouping was approximately the same.

Women purchased their own needles in seven San Francisco and 13 Los Angeles shops. Employers' estimates as to how much this expense would be, varied from 5 cents in three months to 25 cents per month. One Los Angeles shop had its four women supply their own thread; another made its two vest-makers and one pants-maker pay for the power used to run their machines. These items, even when small in amount, decrease the real earning power.

TABLE XXII.

Number and Per Cent of Women Employed on a Time Rate Basis Receiving Classified Weekly Rates of Pay.

City	Women receiving classified weekly rates of pay:									Total number	Average weekly rate of pay
	Under $6.00	$6.00 to $6.99	$7.00 to $7.99	$8.00 to $8.99	$9.00 to $9.99	$10.00 to $10.99	$11.00 to $11.99	$12.00 to $12.99	$13.00 and over		
San Francisco and Oakland:											
Number	11	22	17	9	14	31	3	81	84	272	$11 53
Per cent	4.0	8.1	6.3	3.3	5.1	11.4	1.1	29.8	30.9	100.0	
Los Angeles:											
Number	7	7	14	11	23	30	7	38	49	186	10 93
Per cent	3.8	3.8	7.5	5.9	12.4	16.1	3.8	20.4	26.3	100.0	
Totals:											
Number	18	29	31	20	37	61	10	119	133	[1]458	$11 30
Per cent	3.9	6.4	6.8	4.4	8.1	13.3	2.2	25.9	29.0	100.0	

[1] This includes the 288 time workers employed during the year in 19 establishments and the 170 time workers employed in October, 1915, in the 66 establishments having no back records.

The hours of work during the week are very irregular in the outside shops. Four or five days is the usual week. Employment in the inside shops, while more regular, is not sufficiently so to bring up the average weekly hours of all women for whom yearly records were obtained to more than 38½ hours per week. Less than one-third the force averaged more than five days of work per week. This is true in all three cities covered by the investigation.

Hours in excess of 48 occurred at intervals. In San Francisco eight firms employed 46 women overtime that averaged 2½ hours for an average period of two weeks. In Los Angeles ten women in five firms averaged four hours overtime for three weeks. The maximum period of extra time for any one woman was 14 weeks, and the maximum amount of overtime per person in any one week was 24 hours in Los Angeles and nine in San Francisco.

TABLE XXIII.

Number and Per Cent of Women Working Classified Weekly Hours in the Men's Ready-made and Custom-made Clothing.

City	Women working classified weekly hours:							Total number	Average weekly hours
	Eight hours or less	Over 8 hours to 16 hours	Over 16 hours to 24 hours	Over 24 hours to 32 hours	Over 32 hours to 40 hours	Over 40 hours to 48 hours	Over 48 hours		
San Francisco and Oakland:									
Number	2	2	9	24	96	61	-------	194	38.3
Per cent	1.0	1.0	4.6	12.4	49.5	31.5	-------	100.0	
Los Angeles:									
Number	2	-------	11	22	53	37	1	126	38.9
Per cent	1.6	-------	8.7	17.4	42.1	29.4	0.8	100.0	
Totals:									
Number	4	2	20	46	149	98	1	[1]320	38.5
Per cent	1.2	0.6	6.3	14.4	46.6	30.6	0.3	100.0	

[1] Hours worked by 24 piece workers were not reported.

With less than a five-day week prevailing in the industry, the earnings of women will always fall noticeably below their rates. The 288 timeworkers, whose yearly records were obtainable, had received a weekly rate of pay of $11.27; their earnings were $9.12 or $2.15 less than their rate. The 56 pieceworkers, for whom no such comparison can be made, earned $10.32 per week. Considering the women as a whole, more than one-fourth earned less than $6.00, while more than one-half earned less than $9.00. The difference in earnings in the inside and outside shops is marked when compared with the slight difference in rates. Women employed in the inside shops average $1.19 more per week, or $9.64, as compared with $8.43 earned in the outside shops. Thirty-five per cent of the outside shop workers earned less than $6.00 per week, while less than 20 per cent did so in the inside shops.

TABLE XXIV.

Number and Per Cent of Time and Piece Workers Earning Classified Weekly Amounts During Weeks Employed in Year Ending October 1, 1915.

Time or piece workers	Women earning classified weekly amounts:									Total number	Average weekly earnings
	Under $6.00	$6.00 to $6.99	$7.00 to $7.99	$8.00 to $8.99	$9.00 to $9.99	$10.00 to $10.99	$11.00 to $11.99	$12.00 to $12.99	$13.00 and over		
Time workers:											
Number	86	23	32	41	30	28	16	10	22	288	$9 12
Per cent	29.9	8.0	11.1	14.2	10.4	9.7	5.6	3.5	7.6	100.0	
Piece workers:											
Number	4	6	2	7	15	9	6	2	5	56	10 32
Per cent	7.1	10.7	3.6	12.5	26.8	16.1	10.7	3.6	8.9	100.0	
Totals:											
Number	90	29	34	48	45	37	22	12	27	344	$9 31
Per cent	26.2.	8.4	9.9	13.9	13.1	10.8	6.4	3.5	7.8	100.0	

TABLE XXV.

Number and Per Cent of Women Employed in Inside and Outside Shops Earning Classified Weekly Amounts During Weeks Employed in Year Ending October 1, 1915.

Type of shop	Women earning classified weekly amounts:									Total number	Average weekly earnings
	Under $6.00	$6.00 to $6.99	$7.00 to $7.99	$8.00 to $8.99	$9.00 to $9.99	$10.00 to $10.99	$11.00 to $11.99	$12.00 to $12.99	$13.00 and over		
Inside shop:											
Number	36	9	19	32	25	24	15	10	21	191	$9 64
Per cent	18.9	4.7	9.9	16.8	13.1	12.6	7.8	5.2	11.0	100.0	
Outside shop:											
Number	54	20	15	16	20	13	7	2	6	153	8 43
Per cent	35.3	13.1	9.8	10.4	13.1	8.5	4.6	1.3	3.9	100.0	

These earnings are not the weekly average for a year, but only for the period of employment. In the outside shops the 153 women averaged but 16.5 weeks of employment during the year. In the inside shops 191 women averaged 32.6 weeks. Employment, therefore, is not only steadier during each week in the inside shops, but is obtainable for almost twice as long a period.

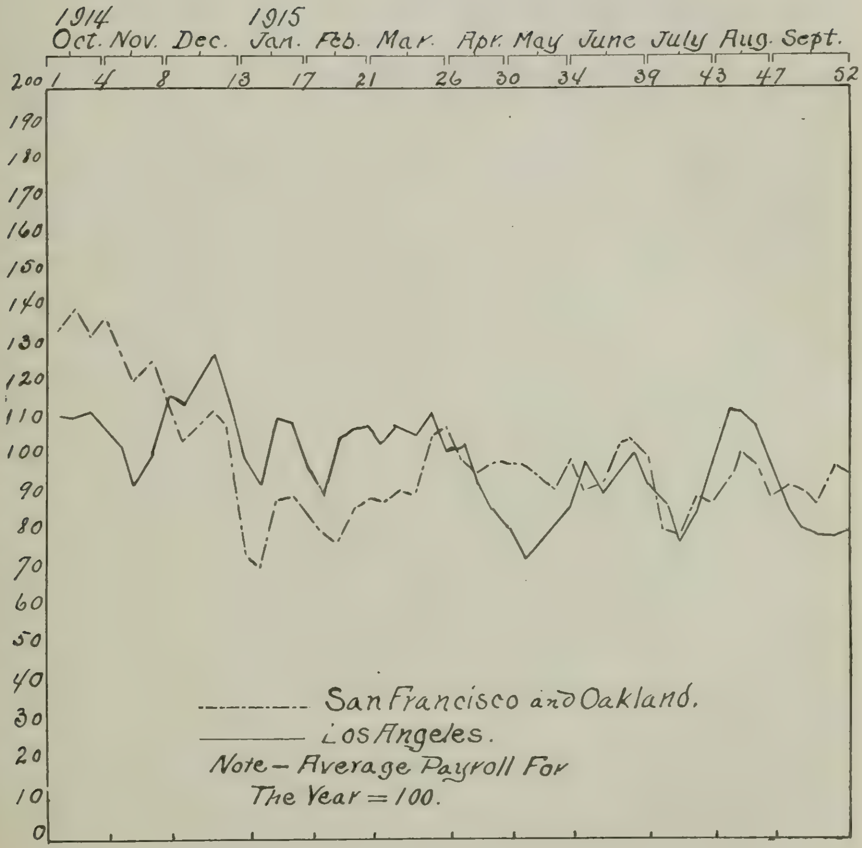
Taking the industry as a whole, there were about 26 weeks of work for all the 344 who were employed during the year. But more than half did not have work for this period. Only a quarter were employed for practically the whole year. While 344 women were employed, in the 19 shops having yearly records, during the course of the year, only 168 (or about half) would have been needed if the work had been evenly distributed throughout the year. At times in the summer and early fall only 54 out of the 128 were employed in Los Angeles, and 83 out of 216 were employed in San Francisco. The maximum number employed at one time in San Francisco was 138, in Los Angeles 83, or more than 50 per cent less than the number employed during the year.

TABLE XXVI.

Number and Per Cent of Women Employed in the Men's Ready and Custom Made Clothing Industry, Working Classified Number of Weeks During the Year Ending October 1, 1915.

City	Women working classified number of weeks:								Total number	Average number of weeks employed
	Under 5 weeks	5 to 8 weeks	9 to 16 weeks	17 to 24 weeks	25 to 32 weeks	33 to 40 weeks	41 to 48 weeks	49 to 52 weeks		
San Francisco and Oakland:										
Number	42	22	31	24	21	13	9	54	216	24.7
Per cent	19.4	10.2	14.4	11.1	9.7	6.0	4.2	25.0	100.0	
Los Angeles:										
Number	25	10	21	13	6	6	12	35	128	26.2
Per cent	19.5	7.8	16.4	10.1	4.7	4.7	9.5	27.3	100.0	
Totals:										
Number	67	32	52	37	27	19	21	89	344	25.3
Per cent	19.5	9.3	15.1	10.7	7.9	5.5	6.1	25.9	100.0	

Seasonal fluctuations are not sharply defined in the men's clothing industry in California when compared with the ladies' cloak and suit industry. In San Francisco, the heaviest business fell in October and the dullest week occurred in January. During the rest of the year, although there were busy weeks in March and June, there were no decided variations in the business as far as the women's work was concerned. In Los Angeles, an increase in work for women occurred in May, but the curve of employment is also comparatively regular. The industry is better fit, therefore, to give employment throughout the year to women than is the cloak and suit branch.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80
70
60
50
40
30
20
10
0
San Francisco and Oakland.
Los Angeles.
Note—Average Payroll For The Year = 100.

THE EMPLOYMENT OF WOMEN IN THE CLOAK, SUIT AND SKIRT INDUSTRY OF CALIFORNIA.

The manufacture of cloaks, suits and skirts in California is confined to San Francisco and Los Angeles. As all the large retail cloak and suit merchants have trade connections in New York, the field of the local manufacturer is limited almost entirely to filling in stocks of garments purchased in the East or to making garments for the small merchant who does not send buyers to New York. As a result, the work of the manufacturer consists mainly in copying models brought out by the store buyers or in copying designs which appear in the trade and fashion papers. The growth of the large store has made this business a precarious one. Whereas San Francisco manufacturers at one time did a large business in towns the size of Stockton and Sacramento, as well as in San Francisco, very little of the trade now comes from outside cities. An industry, seasonal by the very nature of the article manufactured, is rendered increasingly unstable by its limited market. These conditions have forced the manufacturers to enter the retail custom field to some extent, although they do so against the protest of the Merchants Association.

The investigations covered all firms in business in San Francisco and Los Angeles for one year or more, and six newly established houses in San Francisco, or a total of 22 firms. The 16 manufacturers established for at least one year employed 430 women during the period beginning October 1, 1914, and ending October 1, 1915, 186 being the largest number employed at any one time. The six other establishments employed 22 women on October 1, 1915. The methods of payment and rates of pay were obtained for the entire 452 women. A transcript of the yearly payroll of the 16 firms was made by the commission's agents, so that the earnings, hours of work and seasonal fluctuations in employment might be known.

The shops engaged in the manufacture of cloaks, suits and skirts are too small to permit of classifications of work into distinct occupations. Work divided into five and six parts while business is at its height, may fall to one woman to do in the dull season. Different kinds of garments also require different divisions of work. On a high grade or elaborate garment, men tailors may make the garment complete, giving only the lining, felling and minor finishing to the women to do. On more simple garments women baste the different parts of the garment together, sew in linings, fell edges, sew on belts and trimmings and make the skirt. Machine operation on coats is almost always done by men, while pulling out basting threads, attaching hooks and eyes, sewing on buttons and making buttonholes by hand is a part of the women's work.

The amount of work which women do varies considerably from shop to shop. In San Francisco the woman labor cost does not exceed 15 per cent of the total manufacturing cost of the cheapest garment made. In Los Angeles it reaches a higher figure.[9] Any regulations affecting women's wages would therefore be felt more in the southern city than in San Francisco.

Regardless of the division of labor, all women are paid directly by the firm. The system by which tailors employed by the firm, hire and pay their women liners, which prevails in New York, is entirely absent in California.

Because the woman capable of turning her hand to any part of the finishing work is an essential in the small shop, minors are practically excluded from the industry and inexperienced adult women are few. The supply of women with experience in one of the several branches of the garment trades, that is, cloak and suit, ladies' custom tailoring, dressmaking, dress and waist making, or men's tailoring, is apparently equal to the demands of the cloak and suit industry, save at the height of its season. Occasionally an inexperienced worker is taken on at that time to do the little jobs, such as pulling bastings or sewing on buttons and hooks and eyes. But no recognized apprenticeship system exists. Employers do not know how much or what experience their workers have had. They know what work they can or cannot do well, but how long it has taken them to learn the trade is not known.

Approximately nine-tenths of the 452 women employed in the industry were paid time rates. One-half of the remaining 10 per cent worked on a time basis for a part of the year. The women engaged on a piece rate basis were generally those employed at the more skilled occupations, such as skirt making. With one exception (that of a firm employing two women), all firms that had anyone employed on a piece rate basis, employed other women on a time basis of payment. Placing a minimum time rate in the industry would therefore only entail keeping time records for a few additional women.

TABLE XXVII.

Number and Per Cent of Time Workers and Piece Workers Employed in the Cloak, Suit and Skirt Industry in San Francisco and Los Angeles.

City	Time workers		Piece workers		Total	
	Number	Per cent	Number	Per cent	Number	Per cent
San Francisco	220	83.0	[1]45	17.0	265	58.6
Los Angeles	183	97.9	[2]4	2.1	187	41.4
Totals	403	89.2	[3]49	10.8	452	100.0

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[9] A statement of the per cent which the woman labor cost was of total manufacturing cost, was obtained from each manufacturer.

[1] Twenty-two of these women worked on time rates part of the year.

[2] One woman worked on a time rate part of the year.

[3] Twenty-three of these women worked on time rates part of the year.

Although all but one of the Los Angeles shops were organized in September, 1915, after a strike, the rates of pay for only five women in one firm had been changed at the time of the investigation. The union rate for skirt finishers is $10.00 per week, while Los Angeles finishers were paid from $7.00 to $14.00; fellers $10.00 per week, the women actually receiving from $6.00 to $13.00; liners $16.00, while women were getting from $9.00 to $17.00.

San Francisco shops were not organized during the period covered by the investigation. Bargaining between the employer and employee was the method of determining what each individual's rate of pay should be. When business is good, the employee has the upper hand and can name a good rate, but when it is dull, she is at the mercy of the employer. In the case of seven individuals in San Francisco and ten in Los Angeles, employees' wage rates were lowered during the course of the year.

About two-fifths of the 403 time workers employed during the year ending October 1, 1915, were paid less than $9.00 per week. Only 10, or 2½ per cent, received a rate less than $6.00. The last group of women were employed to sew on buttons and in other minor capacities. Just a little less than one-half of the force were paid $10.00 or over per week. As shown in Table XXII, the weekly rates of pay of the women as a whole averaged $1.11 more in San Francisco than in Los Angeles, the average rate being $10.56 in San Francisco and $9.45 in Los Angeles. The difference is due in part to the large number of women in San Francisco establishments receiving $13.00 and over.

TABLE XXVIII.

Number and Per Cent of Women Employed in the Cloak, Suit and Skirt Industry on a Time Rate Basis Receiving Classified Weekly Rates of Pay.

City	Women receiving classified weekly rates of pay:									Total number	Average weekly rate of pay
	Under $6.00	$6.00 to $6.99	$7.00 to $7.99	$8.00 to $8.99	$9.00 to $9.99	$10.00 to $10.99	$11.00 to $11.99	$12 00 to $12.99	$13.00 and over		
San Francisco:											
Number	7	11	31	20	31	32	10	27	51	220	$10 56
Per cent	3.2	5.0	14.1	9.1	14.1	14.5	4.5	12.3	23.2	100.0	
Los Angeles:											
Number	3	19	27	40	21	26	2	22	23	183	9 45
Per cent	1.6	10.4	14.7	21.9	11.5	14.2	1.1	12.0	12.6	100.0	
Totals:											
Number	10	30	58	60	52	58	12	49	74	403	$10 06
Per cent	2.5	7.4	14.4	14.9	12.9	14.4	3.0	12.1	18.4	100.0	

In no establishments were women charged for power, materials, belts or thread. One firm, employing three women, made them purchase their own needles in the retail market. While needles may not be a large item, there seems no excuse, except custom, for putting this burden on the employees.

The impressive feature of the employment of women in the cloak and suit industry is not the low rates of pay; it is the short periods of employment and the irregular hours when employed. Although a three to four weeks strike in four Los Angeles shops lowers the average weeks of employment, the showing would be poor even if this had not occurred. More than one-third of the 430 piece and time workers were employed for less than five weeks in the 16 establisments covered in the investigation. Three-fourths did not have 26 weeks of employment in the industry during the year. Only 17 per cent were employed for two-thirds or more of the year. If all the 430 piece- and time-workers had been employed during the same weeks, they would have completed all the work done in the year in 15 weeks. Attempts to find out what supplemental employment these women might have had were unsuccessful.[10] Some of them did dressmaking or got some work in the alteration departments of the retail stores, but as these branches are busy at the same time as the cloak and suit factories, employment confined to the dressmaking and tailoring trades must needs be irregular. These women did not work in the men's tailoring establishments.

TABLE XXIX.

Number and Per Cent of Women Employed in the Cloak, Suit and Skirt Industry Classified Number of Weeks During the Year Ending October 1, 1915.

City	Women working classified number of weeks:								Total number	Average number of weeks employed
	Under 5 weeks	5 to 8 weeks	9 to 16 weeks	17 to 24 weeks	25 to 32 weeks	33 to 40 weeks	41 to 48 weeks	49 to 52 weeks		
San Francisco:										
Number	91	48	34	20	18	8	12	12	243	13.3
Per cent	37.5	19.8	14.0	8.2	7.4	3.3	4.9	4.9	100.0	
Los Angeles:										
Number	67	25	19	17	18	14	21	6	187	17.6
Per cent	35.8	13.4	10.2	9.1	9.6	7.5	11.2	3.2	100.0	
Totals:										
Number	158	73	53	37	36	22	33	18	430	15.1
Per cent	36.7	17.0	12.3	8.6	8.4	5.1	7.7	4.2	100.0	

This condition in the cloak and suit industry is not peculiar to California. A study of regularity of employment in 90 New York shops, made by the United States Bureau of Labor Statistics for 1913–1914 shows that approximately 40 per cent of the 377 women employed worked less than five weeks, while more than 70 per cent worked less than 26 weeks.[11] These New York figures, however, contain some duplications, because the identity of women working for more than one firm could not be established. In the California investigation a woman found working in two or more cloak and suit establishments was counted as a single person.

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[10] Few women were to be found at the addresses furnished by employers or gotten from the last directory.

[11] See Bulletin of the United States Bureau of Labor Statistics, No. 147, "Wages and Regularity of Employment in the Cloak, Suit and Skirt Industry," page 39.

While the establishment hours throughout the industry were 48 per week,[12] but few women worked full weeks during their period of employment. Time-workers (the hours of pieceworkers were not kept) averaged 40 hours of work per week, and the average is brought up by the number of women working overtime in rush weeks. Three firms in San Francisco worked 38 women more than 48 hours for from one to eleven weeks during the year. This overtime ranged from 30 minutes to 18 hours per week, averaging five hours and 50 minutes for the total number (122) of weeks of extra work. In Los Angeles overtime was done by 20 women in six shops. It occurred over a period of from one to 18 weeks, and averaged three hours per week for the total number (67) of women-weeks. The retail merchant, it was stated, gives the manufacturer but a short time to turn out work. Some of the manufacturers rather have the regular hands do this work than call in extra help. The employee is naturally anxious to get any work that will increase a yearly income, which the irregularity of the employment renders uncertain.

TABLE XXX.

Number and Per Cent of Women Working Classified Average Weekly Hours During their Period of Employment in the Cloak, Suit and Skirt Industry.

City	Women working classified average weekly hours:								
	Eight hours or less	Over 8 hours to 16 hours	Over 16 hours to 24 hours	Over 24 hours to 32 hours	Over 32 hours to 40 hours	Over 40 hours to 48 hours	Over 48 hours	Total number	Average weekly hours
San Francisco:									
Number	6	6	14	25	56	92	4	203	41.1
Per cent	3.0	3.0	6.9	12.3	27.6	45.3	1.9	100.0	
Los Angeles:									
Number	6	9	4	21	64	82	-------	186	38.8
Per cent	3.2	4.8	2.2	11.3	34.4	44.1	-------	100.0	
Totals:									
Number	12	15	18	46	120	174	4	[1]389	40.0
Per cent	3.1	3.9	4.6	11.8	30.9	44.7	1.0	100.0	

[1] Hours of 41 pieceworkers were not recorded.

Even with this overtime work, which is generally paid for at the regular rates,[13] the earnings of women during the weeks employed fall more than $1.00 below their rates of pay. The rates for time workers averaged $10.06 per week, their earnings averaged $8.78, or $1.28 less than their rate per week. Including the pieceworkers, 30 per cent of the 430 women employed during the year earned less than $6.00 a week. A large number of these women are among those employed for less than five weeks. As would be expected, the earnings of those employed for the greater part of the year fall in the higher earnings groups. Yet 70 per cent earned less than $9.00, although the per cent of timeworkers whose rates were below that amount was but 40.

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[12] Only one firm (in Los Angeles) pays regular employees for holidays. San Francisco firms observe ten holidays during the year; Los Angeles manufacturers six.

[13] One firm pays time and a half. The newly established union rate for overtime in Los Angeles is time and a quarter.

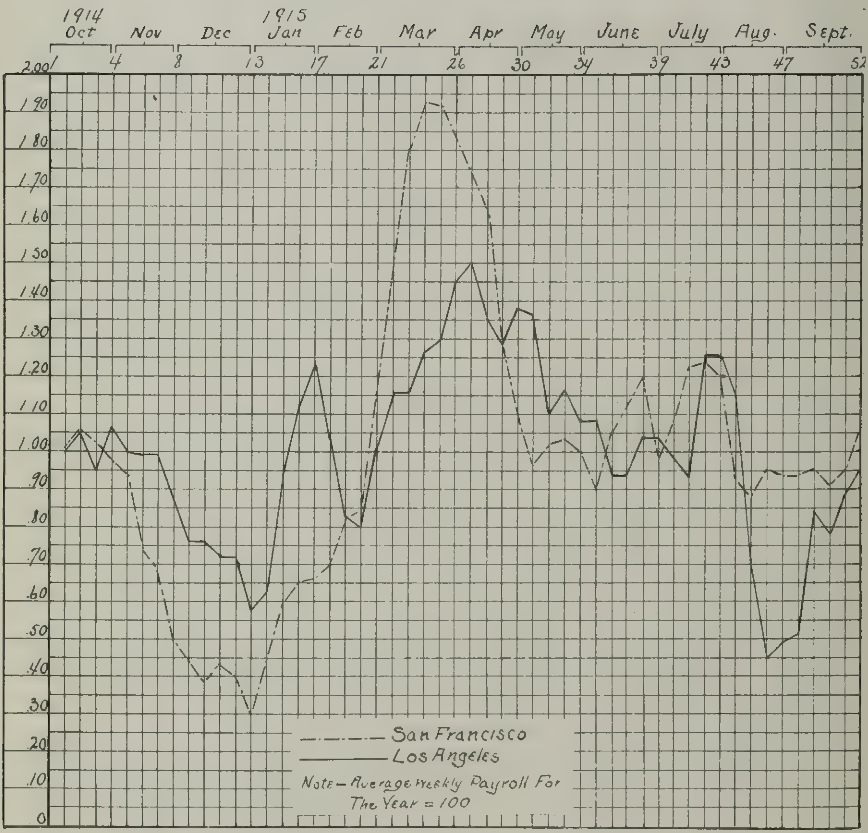
TABLE XXXI.

Number and Per Cent of Women Employed in the Cloak, Suit and Skirt Industry Earning Classified Weekly Amounts.

City	Women earning classified weekly amounts:									Total number	Average weekly earnings
	Under $6 00	$6.00 to $6.99	$7.00 to $7.99	$8.00 to $8.99	$9.00 to $9.99	$10.00 to $10.99	$11.00 to $11.99	$12 00 to $12.99	$13.00 and over		
San Francisco:											
Number	61	41	34	24	19	19	12	14	19	243	$9 19
Per cent	25.1	16.9	14.0	9.9	7.8	7.8	4.9	5.8	7.8	100.0	
Los Angeles:											
Number	68	28	28	16	19	7	8	4	9	187	8 40
Per cent	36.4	15.0	15.0	8.6	10.1	3.7	4.3	2.1	4.8	100.0	
Totals:											
Number	129	69	62	40	38	26	20	18	28	430	$8 79
Per cent	30.0	16.0	14.4	9.3	8.8	6.0	4.7	4.2	6.6	100.0	

Increasing rates to meet the standards of healthful living in all cases would not, therefore, solve the earning problem for the women employed in the cloak and suit industry. Steady employment throughout each week and for at least a large part of the year must be assured them. As even the maximum number employed in any one week during the year was but 186, while the minimum number was 70, it is questionable whether this could be done for the 430 women who worked in the 16 cloak and suit establishments during the year. A study was made of the fluctuations in employment from week to week during the year, so that the time when supplemented employment was most needed might be known.

The following graph shows how much the pay roll for women varied from week to week from the average weekly pay roll, which is designated as 100. The highest point in the industry in both San Francisco and Los Angeles occurred in the third week of March, the lowest in the first week of January. The changes from week to week were more abrupt in San Francisco than in Los Angeles. The amount of money expended in the San Francisco branch falls below the average in the fourth week of October, 1914, and continues below until the third week of February, 1915. From the fourth week of March until the fourth week of April, it is above the average. From that point until August, the curve fluctuates; in August a steady decline occurs.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47
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1.80
1.70
1.60
1.50
1.40
1.30
1.20
1.10
1.00
.90
.80
.70
.60
.50
.40
.30
.20
.10
0
San Francisco
Los Angeles
Note — Average weekly Payroll For The Year = 100

In Los Angeles the winter dull season was not so long, and the spring busy season began in February and lasted through May. The drop in business in August was due to the strike and would not necessarily occur in a normal year.

Employment through November, December and January in another industry would therefore materially assist these women. As most of them are middle-aged Hebrews and Italians and as many do not speak English, they could not enter the selling departments of the retail stores, which are busy for two months of this period. They would be employable only in other manufacturing establishments.

Besides indicating the seasonal fluctuations, this graph shows that there are few consecutive weeks, either in Los Angeles or San Francisco, that strike the same level of business. The employers' statements that they must constantly contend with small rush orders is, therefore, confirmed. With the industry varying so much from week to week, as well as from season to season, the woman even partially dependent on this work for a living must be in a constant state of uncertainty.

THE EMPLOYMENT OF WOMEN IN LADIES' CUSTOM TAILORING IN LOS ANGELES.

A study was made of the ladies' tailoring industry in Los Angeles, an industry catering to retail custom trade only. Because the problems of the relatively few women workers in this branch of the garment industry proved similar to those in the cloak and suit industry, the investigation was not continued in San Francisco.

From the six Los Angeles establishments keeping records,[14] the same material was obtained as from the cloak and suit houses, namely, rates of pay, weeks of employment, earnings, and hours, during the year ending October 1, 1915.

These six establishments employed 99 women during the year, but in no week were more than 59 employed. All shops were unorganized. They paid all women employees on a time basis. The higher paid women, that is, those getting $16.00 and more, were generally skirt makers; the others were finishers, the occupation having the same significance and variations as were described on page 84 for the cloak, suit and skirt finishers. Seven "apprentices" (that is, young girls with no experience) were employed. With one exception, they were in the establishments only for short periods, and can not therefore be considered as apprentices in the sense that they were learning the trade.

Three of these so-called apprentices were paid $3.00 per week, two $5.00 and two others $7.00. Only 14 per cent of the whole force received less than $9.00, while approximately three-fourths received a weekly rate of $10.00 or more. The average weekly rate for all 99 women was $11.97.

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[14] Three other establishments were visited, but they kept no records.

But, as in the cloak, suit and skirt industry, only a comparatively few of these women were employed any considerable part of the year. Almost half worked less than nine out of 52 weeks. A quarter had from 41 to 52 weeks of employment in this branch of the garment trades. If all the 99 women had been employed the same time, they would have had 19 weeks of work during the year.

During the weeks of employment, the hours were somewhat more regular in the custom than in the ready-made branch of this industry. Three-fifths worked over 40 hours, the average for all being 43 hours and 40 minutes. These hours, however, were brought up by overtime. that is, work in excess of 48 hours per week. Three shops worked 45 women some overtime. This amounted to approximately 21 hours per person. The maximum overtime worked in any one week by any woman was 30 hours and 20 minutes. The maximum number of weeks that extra time was worked by any individual was 38, or all but six of the weeks the woman was employed. Overtime fell not only in the busy season but in some cases throughout the year. Apparently these three Los Angeles firms made no attempt to observe the eight-hour law.

As overtime is paid for at the regular rate, the average earnings are also higher than they would otherwise be. Fifty per cent earned $10.00 or more during their weeks of employment. Sixteen per cent fell below $6.00, however, and forty per cent below $9.00.

Rates of pay, earnings, weeks employed and hours were all therefore better in the ladies' custom tailoring in 1914-1915 than in the cloak and suit industry in Los Angeles. The former industry also varied from the wholesale manufacture in that it had two very distinct busy and dull seasons, while the cloak and suit has only one busy and one dull season. The first busy season occurred in February and lasted 15 weeks, reaching its height the first week in April; the second began in September and lasted through November. December, January, June, July and August were the dull months, one firm closing down entirely in December and August. Obviously, the seasons in the ladies' custom tailoring do not dovetail with those of the cloak, suit and skirt industry.

THE EMPLOYMENT OF WOMEN AND MINORS IN THE LAUNDRY INDUSTRY OF CALIFORNIA.

BY HELEN V. BARY.

PREFACE.

The laundry industry of California presents such different problems in different parts of the state that it was deemed wise before proceeding to fix minimum rates of pay in this industry, to make a supplemental and even more exhaustive investigation than the one made in 1914.

In the retail mercantile trade it was found that there had been a notable voluntary increase in wages between 1912 and 1914. It was hoped that the same spirit of cooperation would permeate the laundry industry, and to more completely find out the increase, if any, and if no increase, what was the cause of its absence, Helen V. Bary was asked to make a careful survey of the trade.

There is such a difference in wages between San Francisco and Los Angeles because of the union schedule of rates prevailing in San Francisco, that an effort was made to find out the relative difference in actual labor cost in the two cities. The commission has kept in close touch with the industry and has received from it help and assistance. The industry has been apparently open minded and desirous of cooperating to find out the truth. For purposes of comparison, we reprint from the first biennial report the summary tables of rates of pay, as this edition is out of print.

The commission presents Miss Bary's report believing it to be an authoritative and careful contribution to the studies of this industry.

TABLE 36. SUMMARY—LAUNDRIES.*

Rate of Wages Per Week—Number of Women Receiving.

(Number of establishments, 81.)

Locality and age group	Under $4.00	$4.00 to $4.99	$5.00 to $5.99	$6.00 to $6.99	$7.00 to $7.99	$8.00 to $8.99	$9.00 to $9.99	$10.00 to $10.99	$11.00 to $11.99	$12.00 and over	Totals
18 years and over—											
San Francisco	------	------	------	7	7	335	221	181	112	210	1,073
Los Angeles	1	3	92	226	506	270	284	124	54	253	1,813
Oakland	------	------	------	------	63	189	75	62	15	110	505
Sacramento	------	------	------	------	3	11	55	28	11	55	163
San Diego	------	------	------	17	72	25	41	31	4	21	211
Totals	1	3	92	250	651	821	676	426	196	649	3,765
Under 18 years—											
San Francisco	------	------	------	------	2	22	14	2	------	1	41
Los Angeles	------	------	------	23	50	12	8	1	4	1	99
Oakland	------	------	------	------	13	7	5	------	1	------	26
Sacramento	------	------	------	------	1	3	4	------	------	------	8
San Diego	------	------	------	6	7	1	1	------	------	------	15
Totals	------	------	------	29	73	45	32	3	5	2	189

*Reprinted from First Biennial Report Industrial Welfare Commission, 1913-14.

TABLE 36a. SUMMARY—LAUNDRIES.

Rate of Wages per Week—Per cent of women receiving.

Locality and age group	Under $4.00	$4.00 to $4.99	$5.00 to $5.99	$6.00 to $6.99	$7.00 to $7.99	$8.00 to $8.99	$9.00 to $9.99	$10.00 to $10.99	$11.00 to $11.99	$12.00 and over	Totals
18 years and over—											
San Francisco	------	------	------	.7	.7	31.2	20.6	16.9	10.4	19.5	100.0
Los Angeles	.1	.2	5.1	12.5	27.9	14.9	15.7	6.8	2.9	13.9	100.0
Oakland	------	------	------	------	12.5	35.6	14.9	12.3	2.9	21.8	100.0
Sacramento	------	------	------	------	1.8	6.7	33.8	17.2	6.7	33.8	100.0
San Diego	------	------	------	8.1	34.1	11.9	19.4	14.7	1.9	9.9	100.0
Totals	.1	.1	2.4	6.7	17.3	21.8	17.9	11.3	5.2	17.2	100.0
Under 18 years—											
San Francisco	------	------	------	------	4.9	53.7	34.1	4.9	------	2.4	100.0
Los Angeles	------	------	------	23.2	50.5	12.1	8.1	1.0	4.1	1.0	100.0
Oakland	------	------	------	------	50.0	26.9	19.2	------	3.9	------	100.0
Sacramento	------	------	------	------	12.5	37.5	50.0	------	------	------	100.0
San Diego	------	------	------	40.0	46.6	6.7	6.7	------	------	------	100.0
Totals	------	------	------	15.3	38.6	23.8	16.9	1.6	2.7	1.1	100.0

TABLE 36b. SUMMARY—LAUNDRIES.

Rate of Wages per Week—Cumulative per cent of women receiving.

Locality and age group	Under $4.00	Under $5.00	Under $6.00	Under $7.00	Under $8.00	Under $9.00	Under $10.00	Under $11.00	Under $12.00	$12.00 and over	Totals
18 years and over—											
San Francisco	------	------	------	.7	1.4	32.6	53.2	70.1	80.5	19.5	100.0
Los Angeles	.4	1.6	3.2	9.1	30.1	43.9	60.1	68.8	79.1	20.9	100.0
Oakland	------	------	------	------	12.5	48.1	63.0	75.3	78.2	21.8	100.0
Sacramento	------	------	------	------	1.8	8.5	42.3	59.5	66.2	33.8	100.0
San Diego	------	------	------	8.1	42.2	54.1	73.5	88.2	90.1	9.9	100.0
Totals	.1	.2	2.6	9.3	26.6	48.4	66.3	77.6	82.8	17.2	100.0
Under 18 years—											
San Francisco	------	------	------	------	4.9	58.6	92.7	97.6	97.6	2.4	100.0
Los Angeles	------	------	------	23.2	73.7	85.8	93.9	94.9	99.0	1.0	100.0
Oakland	------	------	------	------	50.0	76.9	96.1	96.1	100.0	------	100.0
Sacramento	------	------	------	------	12.5	50.0	100.0	------	------	------	100.0
San Diego	------	------	------	40.0	86.6	93.3	100.0	------	------	------	100.0
Totals	------	------	------	15.3	53.9	77.7	94.6	96.2	98.9	1.1	100.0

INTRODUCTION.

The laundry industry is proportionately a more important industry in California than in any other section of the country. Although twelfth in population in 1914, California ranked second only to New York State both in number of establishments and in the value of work done. The value of work done in the state for the year averaged $5.06 per inhabitant in comparison with a general average for the country of $1.46. In the number of persons employed in the industry California ranked third.

SCOPE OF INVESTIGATION.

A preliminary investigation of the laundry industry was made by the Industrial Welfare Commission in 1914 as a part of its general survey of working conditions of women. The leading establishments in San Francisco, Los Angeles, Oakland, Sacramento and San Diego were covered and pay roll data obtained. The present investigation covers the principal establishments of San Francisco, Los Angeles, Oakland, Stockton, Fresno, San Jose, Pasadena, Colton, Riverside and San Bernardino, furnishing data from cities of different character, size and geographical location. In the present investigation men as well as women are included, as in this industry various occupations such as marking and distributing, shaking, starching and ironing, are sometimes filled by men and sometimes by women, and a knowledge of the wages and conditions of the men is essential to an understanding of the general situation. In undertaking this investigation the month of January was selected as the period over which pay roll data was to be secured, January being for the state as a whole an average month.* Transcripts of the pay rolls were taken for the four weeks in the month, including the rates of pay, occupations, number of hours worked † and actual weekly earnings, and the record checked in reference to whether or not the worker had had one year's experience in the industry or not. In addition to pay roll data a general inspection of working and sanitary conditions was made. Information was obtained covering 4,328 women and 1,686 men, a total of 6,014 persons engaged in the industry. In January, 1914, there were 10,416 persons employed in power laundries in the entire state. Allowing for increase in the number engaged in the industry between 1914 and 1916 we still have over 50 per cent of the workers of the state represented in the present investigation.

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*U. S. Department of Commerce; Bureau of the Census; Power Laundries, 1914. Ten thousand four hundred sixteen persons were employed in laundries in California in January. For the year the average number employed in the state was 10,417.

†The number of hours worked was not available in the case of some pieceworkers.

LAUNDRY OCCUPATIONS.

The evolution of the laundry industry within a comparatively short time has changed a simple household task into a complex industry with many chemical and mechanical processes. In place of one general worker we now have a subdivision into thirty or forty specialized processes. These may be divided into the principal divisions of marking, washing and extracting, flat-work ironing, starching, finishing, mending and distributing. Except washing and extracting, in the tending of which machines men are used exclusively, men and women are found in all these processes.

MARKING AND ASSORTING.

When linen is brought to the laundry it is first taken to the marking department. The most systematic method of handling this work is by means of the conveyor system, now in use in quite a few establishments. When the conveyor is used the markers are stationed—sometimes seated and sometimes standing—at desks beside which the conveyor passes. When a marker is ready for a bundle he diverts it from the conveyor to the desk without any strain of lifting. The bundle is opened, the unmarked pieces marked by hand or by machine, a list made of the articles, and the articles put onto the conveyor, which removes them quickly and without confusion. The old method of handling bundles without the conveyor necessitates considerable lifting and confusion.

The possibilities and dangers of infection from the handling of soiled linen is a matter of dispute. Laundry owners and the workers themselves unite in minimizing the danger. In most communities it is against city ordinance for a laundry to take linen from a placarded house, but there are various communicable diseases which are not placardable. Tuberculosis, typhoid and the venereal diseases, which are not placardable, are reported by physicians to be communicable through the handling of body linen. Linen received from hospitals is disinfected before leaving the hospital, and is usually washed in a lot by itself without marking. In many laundries suspicious looking bundles are returned to their owners without being handled, and in some instances bundles are disinfected before being marked or are washed and sterilized before going to the marker.

The Industrial Commission of Wisconsin has adopted the following recommendations for eliminating danger of infection in the marking room:

> "Ample washing facilities, with hot and cold water, soap and towels, should be provided and placed within easy reach of the markers and others handling soiled clothes.
>
> "Markers and others handling soiled clothes should be warned against touching the eyes, mouth or part of the body on which the

> skin has been broken by a scratch or abrasion; and they should be cautioned not to touch or eat food until the hands have been thoroughly washed.
>
> "Persons with abrasions on their hands should not be allowed to handle soiled clothing until such abrasions are adequately protected from infection by bandages or gloves.
>
> "Overgarments should be provided for workers while handling soiled clothing and such garments should be washed frequently.
>
> "Markers should be forbidden to shake or carelessly handle soiled clothes so as to raise unnecessary dust. The dust may contain tuberculosis or other germs, which are easily transmitted in the air.
>
> "Markers and others handling soiled clothing who also handle laundered linen should thoroughly wash their hands and faces and change their overgarments before leaving the marking room.
>
> "Under no circumstances should persons be permitted to sleep in rooms in which laundry work is done.
>
> "Wherever possible washing should be done in a separate room."

In the laundries covered by the present investigation, lavatory facilities, in the majority of plants, are adequate for the plant as a whole, but in few instances are the facilities within easy access of the marking room. In only one plant did the women wear uniform overgarments, which appears to be the only way to insure having aprons of a sufficiently protecting type. In several establishments where the markers wore aprons at their work they were permitted to pass to the distributing room without changing. Gloves and bandages to protect abrasions of the skin from possible infection are worn only in individual instances and not as a matter of establishment rule.

In quite a large number of plants the women's aprons are washed by the laundry without charge, and in one plant the aprons are furnished by the establishment.

From the markers the articles are taken to the assorters, who separate them into classes such as bed linen, table linen, collars and cuffs, handkerchiefs, shirts, personal linen, woolens and flannels; subdividing again into classes according to materials and colors as well as amount of soil. Assorting is usually done by men. In some plants the assorting is done by the markers, the subdivision of labor varying with the size and character of the laundry.

WASHING.

From the marking room the linen is taken to the wash room, a department in which men are employed exclusively. The type of washing machine in use in all power laundries consists of a stationary cylinder inside of which is a perforated cylinder, which revolves first in one direction and then in the other. The clothes are placed in this inner cylinder and cleansed without removal from the machine by the action of suds, hot and cold rinses, bleaching, souring and bluing. From the washing machine the linen is removed to the centrifugal extractor—the mechanical equivalent for the wringer—in which machine all superfluous water is removed.

In the investigation of conditions in the Milwaukee power laundries made by the Federal Bureau of Labor Statistics* a careful study was made of the effects upon the women workers of the chemical processes in the wash room. The lack of exact standards of measurement observed in that investigation indicated more detrimental effect to the clothing than to the women employed in the subsequent finishing processes. The only part of the processes from which positive discomfort to the women workers was probable was indicated by a careless and excessive use of bleaches, particularly lime bleaching. If an excessive amount of bleach is used and not properly rinsed from the linen, irritating fumes are given off in the ironing process.

In the past two years the great increase in the cost of all chemicals used in laundry processes has stimulated an economical and measured use of these agents. Oxalic acid has become prohibitively rare and expensive and chloride of lime has increased several hundred per cent in cost. Electrolytic bleach is now used in many plants formerly using lime bleaches. Much greater care is now being used in the measurement of agents, although exact measurement is not yet made in the majority of laundries.

The sanitation of the wash room has a distinct bearing upon the comfort of the women employees, although women are not employed in that department. Because of its great consumption of steam the flat-work ironing is almost always placed as near as possible to the wash room and usually is in the same general room. An excess of humidity in the washing processes consequently means a decided discomfort to the women employed in the flat-work ironing. All the laundries investigated had cement floors in the wash rooms, a feature usually required by municipal building ordinances. In the majority of the plants the floors are sloped to drain into gutters and no measurable amount of water is able to remain standing on the floors. The proper laying of a cement floor is not an easy matter, however, and in several otherwise excellent establishments a badly laid floor in the wash room is the cause of much unnecessary humidity.

In the old type of washing machine the outer cylinder did not close completely and steam and unpleasant odors escaped into the atmosphere. The more recent type now in general use can be completely sealed while in operation and some are equipped so that they will not operate unless sealed. With this type of washing machine very little humidity need exist in the wash room, and with adequate ventilation the degree of humidity should not exceed that of the outside atmosphere.

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*U. S. Dept. of Labor. Employment of Women in Power Laundries in Milwaukee, 1913.

In several establishments special systems of ventilation have been installed. Washed and cooled air, blown into the plant in several places, accompanied by an effective system of exhausting the humid and heated air, secures excellent ventilation in two plants located in well built up industrial districts. Large exhaust fans are run off the general line shaft in the wash rooms of several establishments. Where a laundry is located in a district which is closely built up, natural ventilation will not be sufficient to insure comfortable and efficient working conditions. In the laundries where a thorough system of ventilation has been installed the verdict is unanimous that the reduction in humidity and temperature is accompanied by an increase in efficiency more than commensurate with the cost of installation and operation.

FLAT-WORK IRONING.

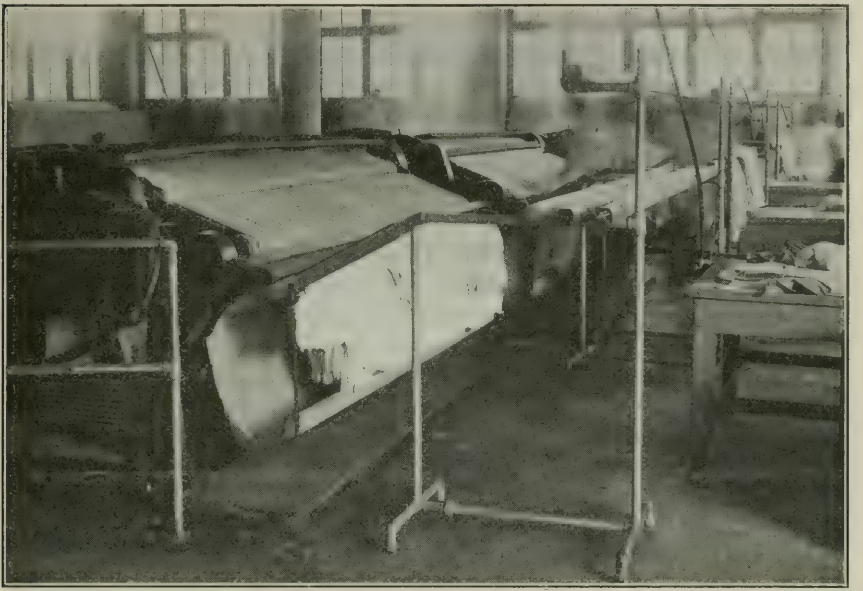
All flat work, such as bed and table linen, towels, etc., is ironed on flat-work ironers, sometimes known as "mangles." The prevailing type of machine is the four- or six-roll (or chest) machine. Small articles such as handkerchiefs are ironed on a one-roll ironer, usually known as the "handkerchief" or "baby" mangle. The principle of operation of the flat-work ironer is to pass the article between the metal chest, heated by steam, and heavily-padded rolls. The women engaged in flat-work ironing work in crews of seven to ten, depending upon the size of machine, speed of operation and character of work. The usual crew on a 120-inch, six-roll ironer consists of three feeders and three folders, one stacker and three or four shakers. In some plants the feeders and folders alternate operations, changing every hour or two hours. The demands of the work make it impracticable for feeders to be seated, but on all small work the folders can be seated, and this alternation enables all of these women to be seated part of the time. In a few plants shakers alternate with folders, gaining an opportunity to sit in this way, but in this case the feeders must stand all day.

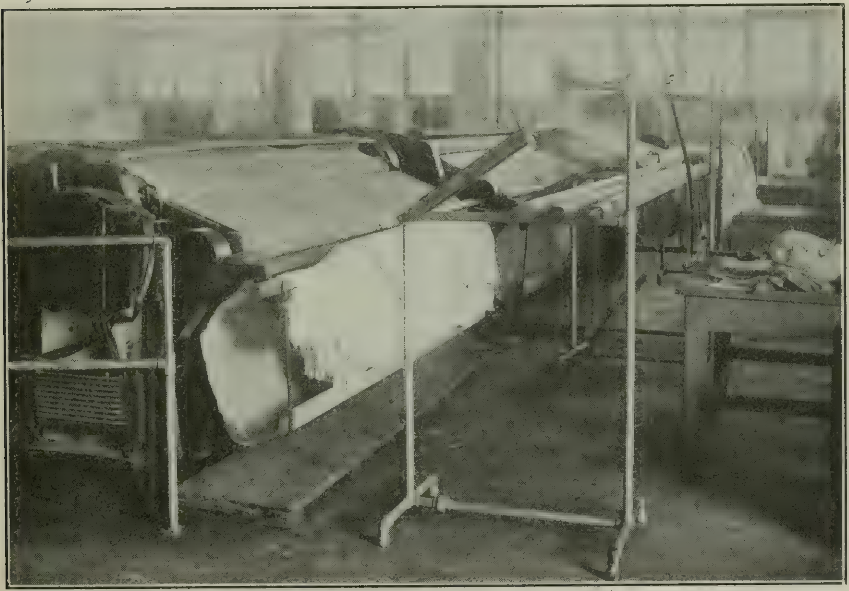
When the water has been removed from the linen in the extractor the linen is left in a hard, damp mass which must be shaken out before ironing. A tumbler is used for this purpose. The tumbler resembles the washing machine in appearance and operation, and in the process of revolving the hard mass of articles is loosened. Tumblers, like washing machines, are tended by men.

From the tumbler the linen is loaded into trucks and taken to the shaking tables. Some of the trucks used are swung on very low axles and the bottoms of the trucks are within a very few inches of the floor. Unloading a truck of this sort entails an unnecessary expenditure of effort, as the movement of stooping over and lifting up an article from close to the floor is very much more laborious than the movement to lift the article from a height of a foot or more from the floor. As these trucks are loaded and unloaded all day any unnecessary expenditure of effort should be eliminated. In addition to the waste of effort in stooping to the bottom of these low-swung trucks an unnecessary amount of reaching is required by some trucks whose sides are too high. Cutting down one or two sides of the truck will not materially reduce its capacity and will decidedly lessen the effort of reaching over the side and down after the articles at the bottom.

The work of the shakers consists of straightening out the pieces of flat work so as to facilitate the work of the women who feed the articles into the mangle. On the large pieces, such as sheets and table cloths, a considerable exertion of the body muscles as well as the arm and chest muscles is required, and sitting is not practicable. On small pieces, such as handkerchiefs and napkins, which can be snapped out with a wrist and arm movement, seating on high stools is entirely practicable and is found in some establishments. The pieces as straightened out are sometimes laid flat on tables and sometimes laid upon long bars set upon racks. This rack is placed behind the feeders' side of the flat-work ironer. In front of the ''apron'' upon which the pieces are fed into the ironer are sockets in which the bars are placed. The racks furnished with the flat-work ironers have pieces projecting upwards at the four corners to prevent the bars from slipping off. When the feeders have put through the ironer all the pieces on the bar before them they remove the empty bar and lift a loaded bar from the rack into place. This involves raising the bar over the corner piece—a matter of about six inches—and transferring it across the intervening two or three feet of space into the sockets. In some plants men are delegated to do this lifting, but usually the women perform the task. In two laundries covered in the present investigation adjustable bars have been attached to the two corners of the rack nearest the flat-work ironer which can be readily swung to make a connection between the rack and the sockets. By using these adjustable bars the strain of lifting is entirely eliminated, as the women merely have to push the bars along. As shown in the illustration, the rack is higher than the sockets of the flat-work ironer, but a rack of even height might be more advantageous. The rack illustrated is made from ordinary pipe and could be easily constructed. The saving of effort in lifting the loaded bars is considerable. This will vary with the amount of work put through the flat-work ironer. On a 60,000-towel per week basis, which is not high for a six-roll ironer, the estimated weight is about eight tons to be transferred during the week. On some classes of work the amount will be double.

While the common type of flat-work ironer in use is the four- or six-chest machine, the steam cylinder machine is used considerably and seems to be gaining in favor on account of the quality of work turned out. The conditions of operation on this type of machine are similar to those on the steam chest, but the machine presents greater difficulties in insuring the comfort of the workers. The highest part of the steam chest does not come above the shoulder of an average worker, so that





Adjustable Bar from Rack to Flat-Work Ironer, eliminating the lifting of loaded bars.

the general air currents are not cut off. The steam cylinder, however, stands higher than the heads of the workers. If the air current comes from behind the feeders the heat of the machine is thrown upon the folders, and vice versa. The heat is also more concentrated, and objection is sometimes made on the score that the workers on one side of the machine cannot see the workers on the other. Ventilation should come from the side of this machine.

In a few laundries in the state exhaust hoods are placed over the flat-work ironers, which remove the steam arising from the ironing of such large quantities of damp articles. Where ceilings are low some system of exhausting this humid atmosphere is necessary to the comfort and efficiency of the workers. The amount of humidity will vary with the amount of dampness in the linen.

STARCHING.

Such articles as require starching pass from the extractors to the starch-room, where they are starched by hand or by machine. Men are almost always employed in the preparation of the starch and the heavier work, the work of the women consisting of the tending of the lighter machines, dipping by hand, and rubbing out the excess of starch. The handling of hot starch is often considered the most disagreeable work in connection with the modern laundry. The natural acidity which is to be found in starch affects the hands of some workers, particularly when the starched articles are handled hot and the pores of the skin thereby opened. Hot starch is used in some laundries on all classes of work, but in an increasing number of plants shirts are stiffened with cold starch.

A variety of small machines are used in the starch room. The starch extractor is similar to the water extractor used in the wash room, but much smaller. It is frequently tended by women, but being small it does not involve any heavy loading or unloading. The bosom roll and band roll are foot-pressure machines but are operated with comparatively light pressure. The dip wheel, brass pan, cylinder and barrel starchers require loading, starting, stopping and unloading and make no special demands upon the worker. The collar roll requires feeding only, after which the excess of starch is rubbed out by hand. Except on the foot-pressure machines, the worker can be seated, although it is not customary to see stools in use.

DRYING.

Articles starched with hot starch require drying and dampening before they are ironed. With cold starch the drying and dampening processes are eliminated. There are two methods of drying in common use, the ''dry room'' and the vacuum drier. The ''dry room'' consists of compartments heated to a high degree of temperature, into which the starched articles are taken, either on movable racks or on conveyors. When the racks are used women hang up the articles on the racks and remove them. In some cases they wheel the racks in and out of the dry room, but usually this heavier work is done by men. With the conveyor system the work of hanging up the articles is done by women, the removal being effected by automatic device.

If the dry room is properly compartmented the surrounding atmosphere is not excessively hot and the humidity is low. When the racks are pushed into the compartments or drawn out a wave of heat comes out of the opening. The vacuum drier gives off considerable heat and needs to be very carefully placed or else connected up with a good exhaust system. A row of vacuum driers in one laundry placed on the north side next the windows, with the prevailing wind coming from the opposite direction, does not increase the temperature of the room noticeably, but placed upon the other side would make the room uncomfortably hot. When located in the center of a room the vacuum drier needs a large exhaust pipe with artificial draught.

Women who hang collars or small articles on conveyors usually have high stools on which they can sit. The handling of large pieces requires constant moving and seating is not practicable.

DAMPENING.

Dampening is a simple process consisting of passing the articles through a fine spray. Aside from a reasonable amount of care in securing even dampening the work makes no demands of skill. As a rule the worker cannot sit to advantage.

Starching, drying and dampening are processes closely connected. Excepting in the largest establishments the workers change about from one to another. In some plants the starching, drying and dampening of collars is performed by the girls who iron and finish the collars.

COLLAR AND CUFF FINISHING.

When the collars and cuffs are starched, dried and dampened they pass first through the collar ironer and then through a variety of collar finishing machines. The collar ironer is similar to the steam cylinder flat-work ironer, only much smaller. It nevertheless gives off a considerable radiation of heat and should receive more care in placing than it usually does. On the ordinary size collar ironer only one operator is employed, who feeds the collars and cuffs between the heated surface and the padded rolls, from which they emerge and drop into a receiving basket. A large number of collar ironers have an exposed heated roll which gives off an uncomfortable amount of heat. Heat deflectors are practicable for use on this type of machine, but are seldom used. Platforms, on which the feeders can stand, are quite commonly placed in front of these ironers, but in a few instances operators were observed working to disadvantage by not having such platforms.

From the collar ironers the collars come out perfectly flat. The collars then pass successively to the seam dampener—a narrow, moistened, revolving wheel which dampens the seam to prevent cracking when the collar is turned—the saw-edge finisher, which smooths the edges—and the shaper. Wing-tipped collars are tipped upon a special machine. All of these finishing machines are light in operation and make no special demands upon the operators. It is customary to find the less sturdy girls in this department. In much of this work the operator can work to advantage sitting.

MACHINE IRONING.

A large part of the ironing of body linen is done on press machines, a complete line of machines being used on shirts. The shirt comes from the starcher or dampener and passes first to the cuff press. The cuffs are put in place on the padded bed of the cuff press, the heated metal plate is then clamped down upon the bed, released, the cuff reversed, the plate again clamped down, and finally released. The process on the yoke and neckband presses is similar excepting that on the yoke press the garment is not turned. In the investigation of working conditions made by the Federal Bureau of Labor in Milwaukee an extensive study was made of the amounts of pressure required in the operation of these machines. The average amount of pressure required to clamp the cuff press was 66.6 pounds, and 37.7 pounds pressure was required to release the press. The neckband and yoke presses required respectively 83.3 and 81.7 pounds to clamp, and 55.5 and 44.4 pounds to release. The number of times this pressure must be exerted depends upon the number of shirts which the operator is expected to iron. From 50 to 60 shirts per hour is a fair number, although in individual laundries as many as 90 or more per hour was reported as the number which the operator was expected to do, or was doing. While the exertion of 60 or even 80 pounds pressure does not appear excessive when tried for a short time the continual strain of exerting this pressure or throwing the weight of the body back and forth, is exhausting. In the opinion of physicians who have studied the question from the viewpoint of occupational disease this exertion of pressure frequently leads to pelvic trouble and other disorders.

In addition to the fatigue caused by the exertion of this pressure the "jar" of clamping and releasing has an exhausting effect physically and nervously. In practically every establishment covered in this investigation the regulation of the amount of pressure was left to the judgment of the operator. The superintendents frequently said that the women adjusted the press to require an unnecessary amount of pressure, having the idea that a better finish could be thus secured.

In only a few laundries did there seem to be intelligent instruction on the part of the management as to the amount of pressure required.

In five of the 84 laundries investigated pneumatic pressure was used. By means of this pneumatic pressure a slight tap with the foot has the same effect as the exertion of the 60 or 80 pounds pressure on the ordinary press. In the plants where it is used the operators and the management unanimously advocate the use of pneumatic devices. The superintendents reported that the women did more and better work since the installation of the devices and the operators said that the difference in fatigue at the end of the day was most decided. In one laundry pneumatic pressure devices were removed after being installed and tried for a short time, but the foreman stated that the installation had been incorrectly done, the amount of pressure coming from the air compressor being several times too great. Objections to the use of pneumatic devices seem to come from sources such as this.

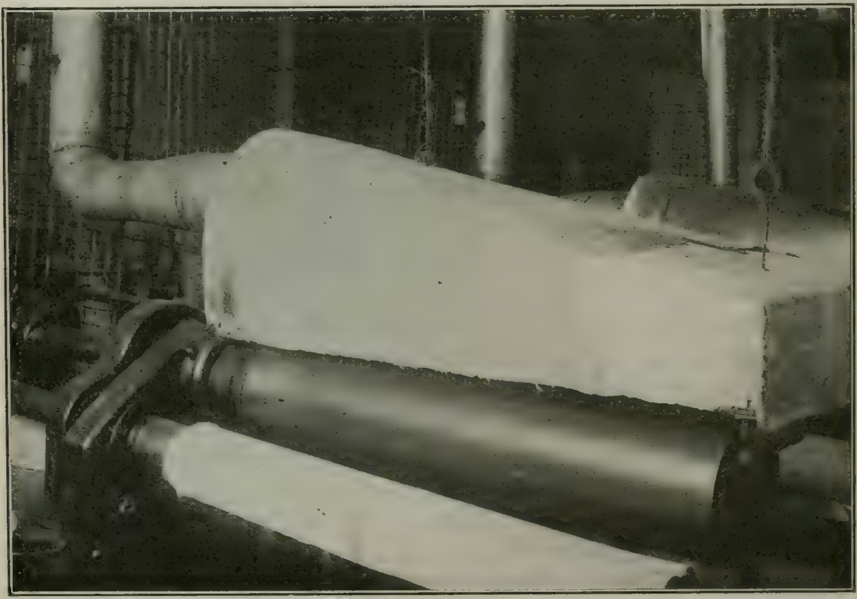
From the cuff, neckband and yoke presses the shirt passes to the bosom or shirt press. This press has a bed larger than that of the cuff, neckband and yoke presses, over which the bosom of the shirt is adjusted, fastened in place, and then swung under the heated metal ironing surface. Hand levers are used on some presses and foot levers on others, but no large amount of exertion is required, as hydraulic pressure is used in clamping the press in place. The proper adjusting of the shirt on the bosom press requires much care as upon this depends largely the appearance of the finished garment, and this is one of the highest paid processes in the laundry.

From the shirt press the garment is taken to the body and sleeve ironers. The common type of body ironer consists of a metal cylinder heated, usually by gas, and a lower, smaller cylinder, which is padded and over which the garment is placed. By means of a treadle the two cylinders are brought into contact and pressure must be exerted to maintain the contact. On one-treadle machines the padded roll revolves in one way only and to change the position of the garment the pressure must be lessened, the rolls separated, and the garment then adjusted. The two-treadle machine permits of reversing the direction of the padded roll. For some kinds of work the one-treadle machine is well adapted, but where it is necessary to go over a garment more than once the two-treadle machine is more desirable. The sleeve ironer is similar to the body ironer but smaller, being 12 to 18 inches in length, while the body ironer is 30 to 36 inches long. In operating, the one-treadle ironer requires the use of one foot on the treadle, constantly applying and relaxing pressure. This induces a treading motion with the muscles of one side of the body which sometimes appears to lead to internal disorders. The difficulty of operation can be greatly lessened by the proper adjustment of the treadles in height from the floor and range of operation, and by providing the operator with a platform of the right height so that her movement will be a pressure downwards instead of a matter of lifting one foot ten or more inches from the floor and then exerting pressure from this disadvantageous position. On a one-treadle machine it would be possible for the operator to use either foot and to change about, but operators become accustomed to using one foot exclusively and do not reverse.

On one type of two-treadle machine the operator exerts pressure with one foot constantly and also with the other foot when operating the reverse. This calls for a careful balance to maintain equilibrium. On the other type of machine pressure is removed from the pressure treadle before the reverse is applied, requiring an entire shifting of the weight of the body. On practically all body ironers platforms are provided, but sufficient care is not always used to have these platforms of the right height.

Pneumatic devices can be applied to the body ironers, and are in use in several plants. By the use of the pneumatic device it is not necessary for the operator to exert more than a tapping pressure to make contact, and the machine can be operated from a sitting position.

While the common type of body ironer consists of the padded roll and the gas-heated roll, an increasing number of shoe machines are being used. The shoe machine is heated by gas, steam or electricity. The heat given off by the shoe machine is less and the danger of having the fingers drawn between the revolving rolls is eliminated.



Exhaust hood heat deflector for body ironer.

A large amount of heat is radiated from a body ironer. In the Milwaukee investigation the temperature range was found to be as much as 15 degrees higher in the working zone than in the general room. Heat deflectors are being used on about half of the body ironers observed in the present investigation, but the majority of these deflectors are not effective. The common type of heat deflector consists of a metal shield, semicylindrical in shape, which is placed over the heated roll. This shield is sometimes lined with asbestos but in many instances where the asbestos had come off it had not been replaced. As the shield comes between the face of the operator and the heated roll it serves as some protection. The shield can not be placed too far down towards the operator's hands without danger of accident. This type of shield at best diverts the heat from the operator's head but does not reduce the temperature of the room. Often some other worker at the rear of the body ironer receives this diverted heat directly. The only effective deflector is accompanied by an exhaust device, such as in the illustration. With this device a properly built metal hood, asbestos covered, is fastened above the heated roll. Out of this hood leads a four-inch exhaust pipe. The exhaustion of the heated air is increased by the operation of a fan. In the plant where this type of heat deflector is in use ten body ironers are placed in a room only sufficiently large to accommodate them. The natural ventilation of the room is excellent but it would be entirely inadequate to insure comfort to the workers unless a highly effective exhaust system were used. With the ten machines in operation the temperature of the room was not noticeably higher than that of the outside atmosphere.

FINISHING.

When the sleeves and body of the shirt have been ironed the garment is passed to the finisher, who goes over with a hand iron any places that may have been neglected or omitted. The shirt is then folded by a folder and passed to the distributing room.

Conveyors of different types are used between the various presses in some establishments. Their use reduces confusion and unnecessary steps.

The man's shirt is well standardized and the various presses can be used to iron each part of the garment. With women's wear the subdivision of process can not be accomplished. Certain garments can be ironed on the body ironer and the skirt press, but the largest part of the work must be done with the hand iron.

The skirt or universal press is a recent addition to the list of presses and is to be found in comparatively few laundries. It is a modification of the skirt press used by tailors and dry cleaners. In operation it is similar to the cuff, yoke and neckband presses but it has a flat in place of a shaped surface. In addition to the foot-treadle the metal cover has a handle, balanced at the back by a weight. No foot pressure tests were made of this machine, but in operation it seems to demand a much greater amount of pressure than any of the small presses.

The class of work done on the universal is what is otherwise done by the body iron, jumbo or other flat irons. Its operation requires little skill.

HAND IRONING.

Women's and children's garments and miscellaneous pieces which can not be ironed on machines are finished by the use of hand irons similar to those in use in the ordinary household. In San Francisco, Oakland, Fresno, Stockton and San Jose the most modern plants use electricity for heating the hand irons, but in the smaller establishments gas is commonly used. In the southern section electricity is used in practically all establishments. The use of electricity adds materially to the convenience and comfort of the worker by eliminating the necessity of walking back and forth at frequent intervals to change irons, it removes the chance of soiling the article by carbon deposit on the iron from the gas flame, and it materially reduces the temperature of the working zone. The seven- or eight-pound iron is the one most commonly used, although some weighing nine or ten pounds are also used. Men ironers as a rule use heavier irons. Many laundries have only one size of iron but others have more than one size so that the worker can express some choice in the matter. In addition to the ordinary hand irons the majority of establishments have jumbo irons, which are similar to hand irons only much heavier. These weigh from 15 to 30 pounds. The heaviest ones have one handle at the back and also one on the "nose" of the iron to permit the operator to use both hands in steering the iron over the article. In some laundries certain women work the jumbos constantly and in other plants the jumbos are used intermittently by the hand ironers, as they may have articles which can be ironed more quickly with the big iron. There is considerable question about possible strain from the use of the jumbo iron. Some of the women operating them complain seriously of specific bad effects as well as general over-fatigue. Properly used, the jumbo iron should not be lifted at all. The stand upon which it rests when not being operated should be of an even height so that it is not necessary to lift the iron off and on to the stand. This provision is not always made.

The hand ironer is usually given the space nearest the windows to insure most careful work. An equal amount of care is not given to some other points. It is not uncommon to see nonadjustable ironing boards, which means that women of varying heights must all work at one level. If the height is correct for the normal woman the unusually tall woman must stoop over unnecessarily and the short woman reach up and work at an added expenditure of effort. Where the boards are adjustable the heights are not always arranged efficiently. Women in their homes have been in the habit of getting along with makeshift appliances and they transfer this custom to their work. It is not enough to be willing to make adjustments for the convenience of the workers. The management must take the initiative. Hand ironers are occasionally seen working from baskets of dampened articles which are placed flat on the floor. As the woman approaches the bottom of the basket she has to stoop nearly to the floor to get each piece in turn. The basket can very easily be placed upon a stand so that this stooping is eliminated.

MISCELLANEOUS OCCUPATIONS.

Every laundry has to have someone to do mending and repairing. In a large plant this becomes a fair-sized department. The stocking darners work on power-driven sewing machines equipped with darning attachments. Ordinary mending is done on power machines and buttons are usually attached with the button-sewing attachment. Towel-supply laundries hem and mark their linen, and this requires the services of additional machine operators.

Socks, flannels and curtains are frequently ironed by means of special appliances but none of these appliances make any special demands upon the worker.

DISTRIBUTION.

When the linen has passed through the laundering processes it reaches the distributing room, where the various articles in the bundle are assembled and checked against the list made by the marker. This is clean but exacting work, and proficiency demands experience. There are two systems of distribution in use, the "Eastern," and "Western." The Western calls for a greater amount of experience than the Eastern, which, by subdivision of work, minimizes the amount of experience required. The Western is the system in general use.

Markers are sometimes also employed as distributors, working the first part of the week in the marking department and the end of the week in the distribution.

CALL OFFICE AGENTS.

Properly speaking, the office agents do not belong in the list of laundry occupations. They are employed by the laundries, however, and form a sufficiently large group to receive mention.

Office agents are to be found only in Los Angeles, in which city there were 227 employed. These agencies are located in little offices, often tiny structures placed between buildings, situated in the hotel and rooming house districts. They cater mainly to men's trade. The bundles received are small, averaging probably less than forty cents. The general rate of pay of the agents is five dollars a week and commission, the commission in some instances being paid on all work received and in others on all work received in excess of a certain sum. An office taking in thirty dollars' worth of work a week is considered a fair agency. Thirty dollars' worth of work a week in bundles averaging forty cents would mean that the agent's work for the week would consist of taking in, listing and handing out seventy-five bundles. This would be equivalent to about one day's work spread over a week's time.

As a business proposition the laundry that pays five dollars salary to collect thirty dollars' worth of work, in addition to paying the rent of an office and the cost of collecting the work from the office and delivering it, is undoubtedly paying more than the business justifies. The solution of the agency problem must come either through reducing the number of these agencies until the amount of business will justify their existence, or in utilizing the time of the women. At present the women spend their time in light sewing or fancy work for themselves, in reading or in mere idleness. The laundries have endeavored to discover some form of light manufacture which the women could do in their idle time and are now trying to find the solution to the problem in this direction. If half the time of two hundred women were used, however, it would represent a very considerable manufacturing business.

These offices with agents who do nothing else are maintained in addition to numerous agencies located in barber shops, cigar stands, drug stores and other places where the exclusive services of an agent are not involved. That most of the office agency work could be handled through this other type of agency, as is customary in other cities, seems probable.

SANITARY CONDITIONS.

Practically all cities restrict laundries to certain districts known as "industrial zones." These zones are away from the residence districts and frequently not on general avenues of traffic, consequently buildings are used or erected for laundries without the incentive of advertising which a "model" plant gains when in a location under the observation of the consuming public. The general standard of laundry buildings is very fair, however, and the plants built recently have availed themselves of the general great advance in the type of industrial buildings.

Natural ventilation in a built-up district is limited, and in an industry whose processes generate heat and consume atmosphere careful attention needs to be given to the subject of ventilation. On ground floors and semi-basements this need is particularly great. The requirements of special ventilation in the washing, flat-work ironing and body-ironing departments has been indicated under the general conditions of this occupation.

Lighting in laundries is almost always excellent on account of the necessity of turning out presentable work.

The flooring in the flat-work ironing departments is usually of wood, but occasionally of cement. The feeders commonly stand upon wooden platforms, which protect their feet from the cold and the unyielding surface. The shakers and folders have no platforms. Strips of battleship linoleum or carpet are sometimes used by those who work on cement floors and some provision of this sort should always be made. In the other departments wooden floors are almost always found, although in a few instances hand ironers and other women who stand upon their feet all day were found working on cement floors with no protection.

Accommodations for the comfort and convenience of the employees have not been so well developed in the laundry industry as in some other industries. Lavatory facilities as a whole are entirely inadequate, as is shown in the following table:

Number of establishments where women use general tubs	12
Number of establishments providing wash bowls in the ratio of:	
One to 20 women	19
One to 30 women	10
Less than 1 to 30 women	19
Number of establishments providing sinks in the ratio of:	
One to 20 women	9
One to 30 women	6
Less than 1 to 30 women	9
Total number of establishments	84

In 67 of the 84 plants soap is provided, no soap being provided in 17 establishments. Towels are provided in only 13 laundries, in the remaining 71 the women using their aprons for this purpose. The general standard of the facilities furnished is not high.

In 25 laundries separate dressing rooms are provided where the women can change their clothes. In other establishments the women make any necessary changes in the toilet rooms, which in some plants are large and airy and in others quite congested. Lockers are to be found in seven plants only, the majority of these lockers being of the open variety which offer limited security for the articles left in them. Money and handbags are frequently left in the general establishment office for safekeeping. For an industry in which a large number of the women must change their clothing these accommodations are inadequate. From the viewpoint of cleanliness it is advisable to provide means for the women to leave their aprons, at least, in the plant so that no household uncleanliness may come in contact with the linen.

In addition to the dressing rooms enumerated three laundries have equipped rest rooms for the comfort of the women. In several plants benches have been put into the dressing rooms, furnishing a place where a woman can lie down if she feels the necessity. Much more adequate provision should be made in this respect. Especially in the summer it is not uncommon for women to experience faintness, if not actually to faint, from the heat. Where no accommodations exist the woman is simply laid upon the floor and worked over, or sent home or to the office of some physician. Aside from these cases of extreme necessity there are many instances in which rest for a short time is a matter of great benefit to a woman.

Toilet accommodations in laundry establishments are of a fair standard in quality. The numbers provided may be seen from the following table:

Number of establishments providing toilet facilities in the ratio of:	
One to 20 women	64
One to 30 women	12
Less than 1 to 30 women	8
Total number of establishments	84

The standard required in the canning industry by the Industrial Welfare Commission is one toilet to 20 women or major fraction. In 80 of the establishments doors were provided for the toilet compartments and in all instances partitions were put up between compartments.

Regular lunch rooms are provided in eight of the laundries covered. In one plant a cafeteria was conducted where the employees could obtain hot, nourishing food at minimum cost. In three plants tea, coffee or chocolate were provided free of cost to the workers, and several others reported the serving of free ice cream occasionally during particularly hot weather. In the plants where these special efforts are made to add to the comfort of the workers the unanimous report is that the returns in efficiency and good will are more than worth the cost. Some provision should be made in laundries so that the workers can obtain hot lunches. The physical strain of the work demands much of the worker, and a cold lunch offers limited comfort at noon, particularly in winter. Lunch places are sometimes located near the establishments, but unless close at hand the women will not patronize them. Hand ironers who use gas irons and other workers in the finishing department frequently use the gas stoves to heat up tea or coffee at noon, but such appliances are not available in all plants nor for all women in the plants where they are to be found.

ORIENTAL LAUNDRIES.

In addition to the detailed information secured from the ordinary steam laundries inspection was made of nearly forty oriental laundries. In some sections of the state these laundries compete seriously with the American laundries.

While both specialize as hand laundries, the Chinese and Japanese laundries are distinctly different types of establishments. The Chinese laundry remains a hand laundry and does not differ in method from the laundry processes as conducted in the ordinary household. The clothes are washed by hand in large tubs, scrubbed on rubbing boards, boiled in large vats, hung out to dry on lines in the back yard or on the roof, and ironed by hand. This work is done entirely by Chinamen, no women being seen in any of the establishments.

The general standards of sanitation are lower than in American laundries. The Chinamen cook and eat in the work rooms, and sleep in the establishment, sometimes in the same rooms. The objectionable practice of sprinkling the garments by ejection of water from the mouth has been eliminated in favor of spray cans into which the operator blows at one end and spray comes out the other end. There is, however, nothing to prevent the transfer of infection from the mouth to the water in the can and thence to the garments. This method of sprinkling is generally used in Japanese laundries as well. The Chinese laundries were usually found very clean, but in several instances the stables were close to the house—in one instance under the same roof—and the laundries objectionably full of stable flies.

The Japanese laundryman differs from the Chinese in that he avails himself as far as possible of mechanical appliances. Practically all the Japanese laundries wash the linen in washing machines, extract the water in mechanical extractors, and have small mangles for all flat-work ironing. This is usually the extent of machinery and it is almost always of small size and not efficiently operated. The laundry machinery companies do not extend credit to orientals and their machinery is usually purchased second hand. Collars are generally sent to American laundries, either directly or indirectly through lodging houses. In Los Angeles a central Japanese plant washes wholesale and finishes collars for a large number of small laundries.

Women are commonly employed as ironers in the Japanese laundries, sometimes only the wives of the men employed, sometimes others, and in some instances white women. In the few laundries having large flat-work ironers American women were employed, the usual rate of pay being below the standard of the steam laundries.

The general standard of sanitation is lower than in Chinese laundries. The Japanese family usually eats and sleeps in the work room, and the beds are commonly used as tables on which the clothes are placed. In two cases the inspector found the garments deposited on beds which had not been made up.

FRENCH LAUNDRIES.

In San Francisco particularly, and more or less in other communities, the French laundry is a serious competitor of the American steam laundry. While the small French laundry is a hand laundry the large ones are equipped with a full line of power machinery, and compete not only for household work but also for the hotel trade. Data were obtained from the largest French laundries and are incorporated in the tables of this report. The wages do not differ particularly from the scale paid in American laundries.

Originally the French laundry was a family affair, and the workers were all French people, mainly coming from the same districts. The employees, both men and women, lived in the establishment and were employed on a monthly basis. This system prevails now in the smaller establishments, but in the larger plants the day worker is superseding the worker who "lived in." Italians, Austrians and other nationalities have invaded the ranks of the workers and the family spirit and customs are breaking up. Lunch is usually served to the employees, and this in many plants is the only remaining characteristic of the family nature of the industry.

ORGANIZATION IN THE INDUSTRY.

In regard to both employers and workers the laundry industry is only partially organized. The state association and local associations embrace most of the establishments of any size, but these associations are not so strong or united in action as they might be. The organization of the employers has done much to standardize rates, to facilitate the introduction of new machinery, to protect credits and to eliminate ruinous discounting. The attempts to standardize prices for the different classes of work have not been very successful and discounting below agreed prices is commonly charged. Very important work in cost accounting has been done recently in some establishments and it is anticipated that this information will strengthen the associations' plans of standard prices. The practice of discounting and "stealing" business has had a most disorganizing effect upon the industry. The "stealing" of employees is also frequently charged.

Among the workers the power laundries of San Francisco are completely organized. Fresno, Stockton and San Jose are partly organized and the union scale of wages is fairly standard in all the establishments in those cities. Oakland is practically unorganized and the southern cities are entirely so. Organization of the workers is shown by the tables of rates and earnings to be accompanied by higher wages and a greater steadiness of employment.

EMPLOYMENT OF MINORS.

In the laundries covered in the present investigation less than forty minors (persons under 18 years of age) were checked on the pay roll data obtained. It is probable that the number of minors recorded is not complete, as few of the laundries maintain registers of the ages of all workers. However, the laundry industry is not one in which persons of immature physical development can be employed. For the purposes of wage inquiry, it is sufficient to note that minor girls were employed at the same tasks and at the same rates of pay as adult women, and if more minors exist in the industry than were recorded it is for the very fact that no distinction was made in their work and pay. The few minor boys recorded received lower wages than boys over 18 years of age, partly because of the limitation of their hours. The records of minors are included in the general tables.

In the Federal Census of Power Laundries made in 1914* there appear in the entire state only two male and two female employees under sixteen years of age.

REGULARITY OF EMPLOYMENT.

The laundry industry is sometimes referred to as a seasonal industry, and irregularity of employment a consequent feature. However, the statistical survey of the number of persons employed in the industry month by month demonstrates that the industry is more regular in its demands for labor than almost any other industry. In the Federal Census of Power Laundries made in 1914 the number of persons engaged in the industry on the 15th of each month was compiled. For the country at large the variation between the number employed during the maximum month and the number employed during the minimum month was less than 5 per cent. For California, the variation between the number employed in June, the minimum month, and the number employed in August, the maximum month, was only 2.5 per cent. The number employed and the variation from the maximum, month by month, is given in the following table:

TABLE I.

Number of wage earners employed in the Laundry Industry in California in 1914 on the 15th day of each month or nearest representative day, with the per cent of variation from the maximum.

Month	Number employed*	Variation from maximum
January	10,417	1.5
February	10,355	2.1
March	10,428	1.4
April	10,446	1.2
May	10,319	2.3
June (minimum)	10,295	2.5
July	10,496	0.8
August (maximum)	10,577	100.0
September	10,527	0.5
October	10,382	1.9
November	10,342	2.2
December	10,416	1.5
Average number employed during the year	10,416	

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*Department of Commerce: Census of Manufactures 1914: Power Laundries.

While Table I shows a maximum variation of only 2.5 per cent for the state, it is probable that the variation would be greater in some cities. We have winter resorts and summer resorts which make special demands, but in a large number of cases these resorts are close to the large cities and transportation facilities bring their work into the established laundries. In several instances localities having a heavy season have been able by special effort to secure business during the off season, which keeps the establishments working at regular capacity the year round. The direct and indirect advantages of regularizing the labor demand justifies the added cost of transportation. With this variation for the state of only 2.5 per cent in the demand for labor during the year the laundry industry should provide regular employment for the workers in the industry. Irregularity of employment is a serious hardship to the worker, and the training of new help is a great expense to the industry. The organization of the labor market through the state and local free employment bureaus offers a means of shifting trained workers to those localities having seasonal fluctuations.

In this connection the records of actual employment in the establishments investigated, covering the four weeks of January, are indicative of waste to both the employers and employees. During those four weeks a total of 4,328 women were employed in the establishments from which data were obtained. Of this number 325 women worked one week only, 270 worked two weeks only and 296 worked three weeks only, leaving 3,437 or 79.5 per cent who were employed the straight four weeks. These women who worked less than four weeks were apparently either quitting or beginning and few of them seemed to be working as "extras." The men showed a better percentage of straight work, the average for the state being 83.7 per cent working the four weeks. The irregularity varies both by cities and occupations. In San Francisco 80.7 per cent of the women and 86.3 per cent of the men worked the four weeks straight; Los Angeles, 76.4 per cent of the women, and 77.0 per cent of the men; Oakland, 85.6 per cent of the women, and 91.6 per cent of the men; Fresno, Stockton and San Jose, 86.6 per cent of the women, and 85.5 per cent of the men; Pasadena, 80.1 per cent of the women, and 88.9 per cent of the men; Colton, Riverside and San Bernardino, 70.8 per cent of the women, and 80.7 per cent of the men. By occupations shakers and miscellaneous help (women) showed an average less than 70 per cent and the mangle girls and markers and distributers less than 80 per cent, the average for markers and distributers being brought down by the Los Angeles figures. The office agencies in Los Angeles also fell below the 80 per cent mark. With these exceptions, all other occupations had an average above 80 per cent. Of the men's occupations, shakers fell below 70 per cent, all others being above 80 per cent. Tables of variations by cities and occupations for men and women are given below, the piecework being separated from the time-work.

TABLE II.

Number and Per Cent of Women employed in the Laundry Industry, by Occupations, working One Week only, Two Weeks only, Three Weeks only and Four Weeks, of the four weeks in January, 1916.

	Number working 1 week only	Per cent	Number working 2 weeks only	Per cent	Number working 3 weeks only	Per cent	Number working 4 weeks	Per cent	Total number	Total per cent
Markers and distributers	36	8.5	41	9.7	29	6.7	320	75.1	426	100.0
Shakers:										
Time rate	49	15.7	26	8.3	22	7.1	215	68.9	312	100.0
Piece rate	1	10.0	------	------	------	------	9	90.0	10	100.0
Mangle hands:										
Time rate	106	8.4	82	6.5	98	7.8	971	77.3	1,257	100.0
Piece rate	11	10.0	12	10.8	7	6.3	81	72.9	111	100.0
Starchers	2	4.0	4	8.0	3	6.0	41	82.0	50	100.0
Shirt press operators:										
Time rate	2	3.0	3	4.5	2	3.0	60	89.5	67	100.0
Piece rate	1	33.0	------	------	------	------	2	67.0	3	100.0
Body ironers:										
Time rate	9	3.9	14	6.0	13	5.6	197	84.5	233	100.0
Piece rate	1	3.4	------	------	1	3.4	27	93.2	29	100.0
Sleevers:										
Time rate	1	1.5	4	6.2	7	10.8	53	81.5	65	100.0
Piece rate	------	------	------	------	------	------	1	100	1	100.0
Neckband, yoke, cuff press operators:										
Time rate	6	4.6	5	3.9	15	11.5	104	80.0	130	100.0
Piece rate	------	------	------	------	------	------	3	100	3	100.0
Finishers:										
Time rate	2	2.2	6	6.8	6	6.8	75	84.2	89	100.0
Piece rate	------	------	------	------	------	------	1	100	1	100.0
Collar finishers	14	6.6	3	1.4	11	5.2	185	86.8	213	100.0
Universal press operators:										
Time rate	------	------	1	8.3	1	8.3	10	83.4	12	100.0
Piece rate	------	------	1	100	------	------	------	------	1	100.0
Hand iron:										
Time rate	9	2.6	14	4.0	30	8.6	296	84.8	349	100.0
Piece rate	18	8.2	12	5.5	11	5.0	178	81.3	219	100.0
Folders:										
Time rate	12	11.7	2	1.9	6	5.8	83	80.6	103	100.0
Piece rate	------	------	------	------	------	------	1	100	1	100.0
Starchers	6	3.4	13	7.3	7	3.9	152	85.4	178	100.0
Seamstresses:										
Time rate	9	7.6	7	5.9	6	5.0	97	81.5	119	100.0
Piece rate	1	11.1	------	------	1	11.1	7	77.8	9	100.0
Forewomen	------	------	2	3.0	3	4.5	62	92.5	67	100.0
Call offices:										
Time rate	------	------	------	------	------	------	7	100.0	7	100.0
Commission rate	20	9.1	14	6.4	16	7.3	170	77.2	220	100.0
Miscellaneous	9	20.9	4	9.3	1	2.3	29	67.5	43	100.0
Total time rate	272	7.3	231	6.2	260	7.0	2,957	79.5	3,720	100.0
Total commission rate	20	9.1	14	6.4	16	7.3	170	77.2	220	100.0
Total piece rate	33	8.5	25	6.4	20	5.2	310	79.9	388	100.0
Totals	325	7.5	270	6.2	296	6.8	3,437	79.5	4,328	100.0

TABLE III.

Number and Per Cent of Women employed in the Laundry Industry, by Cities, Working One Week only, Two Weeks only, Three Weeks only and Four Weeks, of the four weeks in January, 1916.

	Number working 1 week only	Per cent	Number working 2 weeks only	Per cent	Number working 3 weeks only	Per cent	Number working 4 weeks	Per cent	Total number	Total per cent
San Francisco	76	6.1	57	4.6	107	8.6	1,013	80.7	1,253	100.0
Los Angeles:										
Time rate	146	10.1	123	8.5	89	6.2	1,085	75.2	1,443	100.0
Commission rate	20	9.1	14	6.4	16	7.3	170	77.2	220	100.0
Piece rate	27	8.4	18	5.6	16	5.0	261	81.0	322	100.0
Total	193	9.7	155	7.8	121	6.1	1,516	76.4	1,985	100.0
Oakland:										
Time rate	21	4.2	21	4.2	31	6.1	431	85.5	504	100.0
Piece rate	------	------	------	------	1	11.1	8	88.9	9	100.0
Total	21	4.1	21	4.1	32	6.2	439	85.6	513	100.0
Fresno, Stockton, and San Jose:										
Time rate	10	3.7	10	3.7	17	6.3	235	86.3	272	100.0
Piece rate	------	------	------	------	------	------	5	100.0	5	100.0
Total	10	3.6	10	3.6	17	6.2	240	86.6	277	100.0
Pasadena:										
Time rate	8	5.8	10	7.2	6	4.3	115	82.7	139	100.0
Piece rate	5	12.2	5	12.2	2	4.9	29	70.7	41	100.0
Total	13	7.2	15	8.3	8	4.4	144	80.1	180	100.0
Colton, Riverside, San Bernardino:										
Time rate	11	10.1	10	9.2	10	9.2	78	71.5	109	100.0
Piece rate	1	9.1	2	18.2	1	9.1	7	63.6	11	100.0
Total	12	10.0	12	10.0	11	9.2	85	70.8	120	100.0
Total time rate	272	7.3	231	6.2	260	7.0	2,957	79.5	3,720	100.0
Total commission rate	20	9.1	14	6.4	16	7.3	170	77.2	220	100.0
Total piece rate	33	8.5	25	6.4	20	5.2	310	79.9	388	100.0
Total	325	7.5	270	6.2	296	6.8	3,437	79.5	4,328	100.0

TABLE IV.

Number and Per Cent of Men employed in the Laundry Industry, by Occupations, working One Week only, Two Weeks only, Three Weeks only and Four Weeks, of the four weeks in January, 1916.

	Number working 1 week only	Per cent	Number working 2 weeks only	Per cent	Number working 3 weeks only	Per cent	Number working 4 weeks	Per cent	Total number	Total per cent
Markers and distributers	31	5.0	25	4.0	39	6.3	527	84.7	622	100.0
Washers:										
Time rate	38	7.1	21	3.9	27	5.1	447	83.9	533	100.0
Piece rate			2	33.3			4	66.7	6	100.0
Shakers:										
Time rate	20	13.6	14	9.5	13	8.9	100	68.0	147	100.0
Piece rate	3	21.4			1	7.1	10	71.5	14	100.0
Mangle hands	1	1.4	5	6.9	4	5.6	62	86.1	72	100.0
Stackers							5	100.0	5	100.0
Shirt press operators	2	10.0			1	5.0	17	85.0	20	100.0
Body ironers					1	6.7	14	93.3	15	100.0
Neckband, yoke, cuff press operators							5	100.0	5	100.0
Finishers:										
Time rate			2	7.7			24	92.3	26	100.0
Piece rate							1	100.0	1	100.0
Collar finishers							5	100.0	5	100.0
Hand ironers	2	9.5	1	4.8			18	85.7	21	100.0
Starchers	3	2.9	7	6.9	4	3.9	87	86.3	101	100.0
Foremen	1	2.3			2	4.5	41	93.2	44	100.0
Miscellaneous	3	6.1	2	4.1	2	4.1	42	85.7	49	100.0
Total time rate	101	6.1	77	4.6	93	5.6	1,394	83.7	1,665	100.0
Total piece rate	3	14.3	2	9.5	1	4.7	15	71.5	21	100.0
Total	104	6.2	79	4.7	94	5.6	1,409	83.5	1,686	100.0

TABLE V.

Number and Per Cent of Men employed in the Laundry Industry, by Cities, working One Week only, Two Weeks only, Three Weeks only and Four Weeks, of the four weeks in January, 1916.

	Number working 1 week only	Per cent	Number working 2 weeks only	Per cent	Number working 3 weeks only	Per cent	Number working 4 weeks	Per cent	Total number	Total per cent
San Francisco	26	3.9	22	3.4	42	6.4	563	86.3	653	100.0
Los Angeles:										
Time rate	57	9.7	40	6.8	37	6.3	452	77.2	586	100.0
Piece rate	3	14.3	2	9.5	1	4.7	15	71.5	21	100.0
Total	60	9.9	42	6.9	38	6.2	467	77.0	607	100.0
Oakland	3	1.4	10	4.7	5	2.3	196	91.6	214	100.0
Fresno, Stockton, and San Jose	6	6.2	3	3.1	5	5.2	83	85.5	97	100.0
Pasadena	6	6.7	2	2.2	2	2.2	79	88.9	89	100.0
Colton, Riverside, San Bernardino	3	11.6			2	7.7	21	80.7	26	100.0
Total	104	6.1	79	4.7	94	5.5	1,409	83.7	1,686	100.0

In an industry whose individual occupations have become standardized a certain amount of shifting within the industry can be accomplished without causing excessive loss to the workers through unemployment nor great loss to the establishments through inffiency. This calls for the existence of a central labor exchange for the industry, a feature provided by the strong organization of the union in San Francisco. It might be possible to develop a central labor exchange for the industry through the employers' associations or in connection with the public employment bureaus, but practical monopoly is necessary to effective administration.

In connection with the foregoing tables showing the shifting within establishments as indicated by the pay roll data of the four weeks in January, the following tables should be studied showing the number and per cent of the workers in the industry who have been in the industry less than one year.

In San Francisco, of the 1,253 women reported, only 35, or 2.8 per cent, had been in the industry less than one year; in Los Angeles, 756 out of 1,985, or 38.1 per cent, had been in the industry less than one year; in Oakland, 37 out of 513, or 7.2 per cent; in Fresno, Stockton and San Jose, 63 out of 277, or 22.8 per cent; in Pasadena, 29 out of 180, or 16.1 per cent; and in Colton, Riverside and San Bernardino, 33 out of 120, or 27.5 per cent.

As the industry has shown comparatively little expansion, these beginners do not represent an increase in labor force. The figures mean, rather, that practically the same number of workers have left the industry. It can not be assumed that such a number as is shown in Los Angeles has found it no longer necessary to earn a livelihood, but in a large degree the fact must be that they are endeavoring to better their conditions by turning to other lines of work or to other localities. In Los Angeles there is doubtless more shifting on the part of the general population than in the other cities from which information was obtained, but certainly not in the proportion indicated. In some individual establishments in Los Angeles the amount of shifting was found to be very much less than the average for the city, and this shifting varied mainly with the rate of wages, the lower rates being accompanied by a higher proportion of shifting.

This shifting varies by occupations as well as by cities. The highly-skilled occupations, such as shirt-press operators, body ironers, stackers and forewomen show a very low per cent. In Los Angeles the introduction of a large number of women markers and distributers makes that occupation show a much higher proportion of beginners than it would otherwise show. Miscellaneous help averaged 53.5 per cent inexperienced; shakers, 34.2 per cent; general mangle hands, 24.2 per cent; and the office agencies, 57.7 per cent.

The figures by occupations for the different cities and for the state are given in the following table:

TABLE VI.

Number and Per Cent of Women in the Laundry Industry, by Occupations, having One Year's experience or More, or Less than One Year's experience.

San Francisco.

	Number experienced	Number inexperienced	Total	Per cent experienced	Per cent inexperienced	Total
Markers and distributers	72	1	73	98.6	1.4	100.0
Shakers	107	6	113	94.7	5.3	100.0
Mangle hands	394	17	411	95.9	4.1	100.0
Stackers	23	1	24	95.8	4.2	100.0
Shirt press operators	26	----------	26	100.0	----------	100.0
Body ironers	104	----------	104	100.0	----------	100.0
Sleevers	21	----------	21	100.0	----------	100.0
Neckband, yoke, cuff press operators	45	4	49	91.8	8.2	100.0
Finishers	28	----------	28	100.0	----------	100.0
Collar finishers	60	2	62	96.8	3.2	100.0
Universal press operators	----------	----------	----------	----------	----------	----------
Hand ironers	159	1	160	99.4	.6	100.0
Folders	32	----------	32	100.0	----------	100.0
Starchers	68	----------	68	100.0	----------	100.0
Seamstresses	42	2	44	95.5	4.5	100.0
Forewomen	29	----------	29	100.0	----------	100.0
Call offices	----------	----------	----------	----------	----------	----------
Miscellaneous	8	1	9	88.9	11.1	100.0
Total	1,218	35	1,253	97.2	2.8	100.0

Los Angeles.

Markers and distributers	161	113	274	58.7	41.3	100.0
Shakers	56	90	146	38.3	61.7	100.0
Mangle hands	304	237	541	56.3	43.7	100.0
Stackers	20	----------	20	100.0	----------	100.0
Shirt press operators	28	----------	28	100.0	----------	100.0
Body ironers	69	13	82	84.1	15.9	100.0
Sleevers	15	6	21	71.4	28.6	100.0
Neckband, yoke, cuff press operators	29	18	47	61.7	38.3	100.0
Finishers	32	7	39	82.0	18.0	100.0
Collar finishers	67	24	91	73.6	26.4	100.0
Universal press operators	4	4	8	50.0	50.0	100.0
Hand ironers	180	48	228	78.9	21.1	100.0
Folders	48	5	53	90.6	9.4	100.0
Starchers	47	24	71	66.2	33.8	100.0
Seamstresses	42	17	59	71.2	28.8	100.0
Forewomen	20	----------	20	100.0	----------	100.0
Call offices	96	131	227	42.4	57.6	100.0
Miscellaneous	11	19	30	36.7	63.3	100.0
Total	1,229	756	1,985	61.9	38.1	100.0

TABLE VI—Continued.

Number and Per Cent of Women in the Laundry Industry, by Occupations, having One Year's experience or More, or Less than One Year's experience.

Oakland.

	Number experienced	Number inexperienced	Total	Per cent experienced	Per cent inexperienced	Total
Markers and distributers	44	4	48	91.7	8.3	100.0
Shakers	20	5	25	80.0	20.0	100.0
Mangle hands	185	26	211	87.7	12.3	100.0
Stackers	4		4	100.0		100.0
Shirt press operators	6		6	100.0		100.0
Body ironers	46		46	100.0		100.0
Sleevers	11		11	100.0		100.0
Neckband, yoke, cuff press operators	15		15	100.0		100.0
Finishers	8		8	100.0		100.0
Collar finishers	29		29	100.0		100.0
Universal press operators						
Hand ironers	65		65	100.0		100.0
Folders	11		11	100.0		100.0
Starchers	16	2	18	88.9	11.1	100.0
Seamstresses	14		14	100.0		100.0
Forewomen	2		2	100.0		100.0
Call offices						
Miscellaneous						
Total	476	37	513	92.8	7.2	100.0

Fresno, Stockton and San Jose.

	Number experienced	Number inexperienced	Total	Per cent experienced	Per cent inexperienced	Total
Markers and distributers	5	2	7	71.4	28.6	100.0
Shakers	1		1	100.0		100.0
Mangle hands	81	36	117	69.2	30.8	100.0
Stackers						
Shirt press operators	5		5	100.0		100.0
Body ironers	21	1	22	95.4	4.6	100.0
Sleevers	5	3	8	62.5	37.5	100.0
Neckband, yoke, cuff press operators	10	4	14	71.4	28.6	100.0
Finishers	6	1	7	85.7	14.3	100.0
Collar finishers	12	3	15	80.0	20.0	100.0
Universal press operators						
Hand ironers	45	6	51	88.2	11.8	100.0
Folders	5		5	100.0		100.0
Starchers	5	5	10	50.0	50.0	100.0
Seamstresses	5	2	7	71.4	28.6	100.0
Forewomen	8		8	100.0		100.0
Call offices						
Miscellaneous						
Total	214	63	277	77.2	22.8	100.0

TABLE VI—Continued.

Number and Per Cent of Women in the Laundry Industry, by Occupations, having One Year's experience or More, or Less than One Year's experience.

Pasadena.

	Number experienced	Number inexperienced	Total	Per cent experienced	Per cent inexperienced	Total
Markers and distributers	10	1	11	90.9	9.1	100.0
Shakers	7	13	20	35.0	65.0	100.0
Mangle hands	43	6	49	87.8	12.2	100.0
Stackers	1	1	2	50.0	50.0	100.0
Shirt press operators	2	----------	2	100.0	----------	100.0
Body ironers	4	----------	4	100.0	----------	100.0
Sleevers	4	----------	4	100.0	----------	100.0
Neckband, yoke, cuff press operators	6	1	7	85.7	14.3	100.0
Finishers	3	1	4	75.0	25.0	100.0
Collar finishers	11	----------	11	100.0	----------	100.0
Universal press operators	1	----------	1	100.0	----------	100.0
Hand ironers	42	6	48	87.5	12.5	100.0
Folders	2	----------	2	100.0	----------	100.0
Starchers	7	----------	7	100.0	----------	100.0
Seamstresses	4	----------	4	100.0	----------	100.0
Forewomen	4	----------	4	100.0	----------	100.0
Call offices	----------	----------	----------	----------	----------	----------
Miscellaneous	----------	----------	----------	----------	----------	----------
Total	151	29	180	83.9	16.1	100.0

Colton, Riverside and San Bernardino.

	Number experienced	Number inexperienced	Total	Per cent experienced	Per cent inexperienced	Total
Markers and distributers	12	1	13	92.3	7.7	100.0
Shakers	5	12	17	29.4	70.6	100.0
Mangle hands	29	10	39	74.3	25.7	100.0
Stackers	----------	----------	----------	----------	----------	----------
Shirt press operators	3	----------	3	100.0	----------	100.0
Body ironers	4	----------	4	100.0	----------	100.0
Sleevers	1	----------	1	100.0	----------	100.0
Neckband, yoke, cuff press operators	----------	1	1	----------	100.0	100.0
Finishers	3	1	4	75.0	25.0	100.0
Collar finishers	5	----------	5	100.0	----------	100.0
Universal press operators	3	1	4	75.0	25.0	100.0
Hand ironers	12	4	16	75.0	25.0	100.0
Folders	1	----------	1	100.0	----------	100.0
Starchers	4	----------	4	100.0	----------	100.0
Seamstresses	----------	----------	----------	----------	----------	----------
Forewomen	4	----------	4	100.0	----------	100.0
Call offices	----------	----------	----------	----------	----------	----------
Miscellaneous	1	3	4	25.0	75.0	100.0
Total	87	33	120	72.5	27.5	100.0

Summary of the State.—Number and Per Cent of Women in the Laundry Industry, by Occupations, having One Year's experience or More, or Less than One Year's experience.

	Number experienced	Number inexperienced	Total	Per cent experienced	Per cent inexperienced	Total
Markers and distributers	304	122	426	71.3	28.7	100.0
Shakers	196	126	322	60.8	39.2	100.0
Mangle hands	1,036	332	1,368	76.8	24.2	100.0
Stackers	48	2	50	96.0	4.0	100.0
Shirt press operators	70	----------	70	100.0	----------	100.0
Body ironers	248	14	262	94.3	5.7	100.0
Sleevers	57	9	66	86.4	13.6	100.0
Neckband, yoke, cuff press operators	105	28	133	78.9	21.1	100.0
Finishers	80	10	90	88.9	11.1	100.0
Collar finishers	184	29	213	86.4	13.6	100.0
Universal press operators	8	5	13	61.6	38.4	100.0
Hand ironers	503	65	568	88.6	11.4	100.0
Folders	99	5	104	95.2	4.8	100.0
Starchers	147	31	178	82.6	17.4	100.0
Seamstresses	107	21	128	83.6	16.4	100.0
Forewomen	67	----------	67	100.0	----------	100.0
Call offices	96	131	227	42.3	57.7	100.0
Miscellaneous	20	23	43	46.5	53.5	100.0
Total	3,375	953	4,328	78.0	22.0	100.0

RATES OF PAY, AVERAGE HOURS AND EARNINGS OF WOMEN.

METHOD OF PAYMENT.

Of the 4,328 women employed in the laundry industry in the establishments investigated, 3,720 were paid upon time or bonus basis. One laundry in San Francisco paid upon the bonus system, one in Oakland and two in Los Angeles. The data for the women employed on the bonus system have not been segregated from the regular time workers in order not to disclose the pay rolls of individual establishments. The basic rates of pay have been used in tabulating the Rates of Pay, and the bonuses included in the table of Earnings. On the commission system, which is practically identical with the bonus system, the separation has been made for the reason that these workers are the office agents and not regular laundry workers, and it was considered desirable to segregate them. The commission system applies to 220 women. In addition to these classes, pieceworkers number 388, or 8.2 per cent of the regular laundry workers. In San Francisco no piecework is permitted in the union establishments, but piecework, particularly among hand ironers, exists in all the other cities.

RATES OF PAY.

The pay roll data concerning the workers in the laundry industry have been tabulated by occupations and cities because of the distinct variation in rates and earnings in the different branches of work and localities. In the matter of hours totals for the cities only are given, the variation by occupations being negligible.

In San Francisco only shakers and mangle girls receive rates of pay averaging less than $9.00 per week, the average rate for all women being $10.27. Fresno, Stockton and San Jose rank second with an average rate of $9.89, seamstresses being the only additional occupation besides shakers and mangle hands averaging less than $9.00 per week. Oakland ranks third with an average rate of $9.18; shakers, mangle girls, sleevers, folders and the cuff, yoke and neckband operators averaging less than $9.00 per week. Los Angeles, Pasadena and Colton, Riverside and San Bernardino average respectively $8.36 (not including the office agents), $8.83 and $7.76, the majority of the workers receiving less than $9.00 per week. The average rate of pay is $9.22 for the state (not including the office agents), or $9.01, including this occupation. For the state at large the largest group, 26.5 per cent, falls in the interval between $8.00 and $8.99.

The table of rates of pay, separated into cities and subdivided into occupations, with the number falling in each interval and the average rate for each occupation, with percentages of the total falling in each interval, follows:

TABLE VII.

Actual Number of Women employed in the Laundry Industry, on time system of payment, by Occupations, receiving classified weekly rates of pay.

San Francisco—Number of establishments, 25.

Occupation	$5.00 to $5.99	$6.00 to $6.99	$7.00 to $7.99	$8.00 to $8.99	$9.00 to $9.99	$10.00 to $10.99	$11.00 to $11.99	$12.00 to $12.99	$13.00 to $14.99	$15.00 and over	Total	Average rate of pay
Markers, distributers	------	------	------	7	13	8	5	3	3	34	73	$13 92
Shakers	------	------	1	109	2	1	------	------	------	------	113	8 11
Mangle hands	------	------	1	303	87	15	2	1	1	1	411	8 69
Stackers	------	------	------	------	3	15	2	1	------	3	24	11 02
Shirt press operators	------	------	------	------	------	1	------	------	20	5	26	14 15
Body ironers	------	------	------	2	1	69	14	13	4	1	104	10 87
Sleevers	------	------	------	------	14	7	------	------	------	------	21	9 38
Neckband, yoke, cuff press operators	------	------	------	------	27	16	3	1	1	1	49	9 82
Finishers	------	------	------	------	4	1	------	------	1	22	28	14 45
Collar finishers	------	------	------	------	32	13	10	3	1	3	62	10 12
Universal press operators	------	------	------	------	------	------	------	------	------	------	------	------
Hand ironers	------	------	------	2	10	17	66	42	16	7	160	11 69
Folders	------	------	------	1	19	9	2	1	------	------	32	9 55
Starchers	------	------	------	1	22	32	2	8	2	1	68	10 29
Seamstresses	------	------	------	1	22	14	1	3	1	2	44	10 17
Forewomen	------	------	------	------	------	------	------	3	4	22	29	16 74
Call offices	------	------	------	------	------	------	------	------	------	------	------	------
Miscellaneous	------	------	------	3	3	2	1	------	------	------	9	9 28
Total	------	------	2	429	259	220	108	79	54	102	1,253	$10 27
Per cent	------	------	.2	34.1	21.1	17.3	8.7	6.2	4.2	8.2	100.0	

Los Angeles—Number of establishments, 21.

Markers, distributers	------	26	50	46	51	26	6	39	8	22	274	$9 48
Shakers	------	90	43	2	1	------	------	------	------	------	136	6 39
Mangle hands	7	12	308	81	20	2	------	------	------	------	430	7 30
Stackers	------	------	7	9	2	1	------	1	------	------	20	8 28
Shirt press operators	------	------	------	------	5	6	6	8	------	------	25	10 68
Body ironers	2	------	2	7	34	7	------	1	------	------	53	8 87
Sleevers	------	------	3	8	8	------	------	1	------	------	20	8 48
Neckband, yoke, cuff press operators	3	6	6	17	12	------	------	------	------	------	44	7 68
Finishers	------	------	------	2	8	9	4	10	3	2	38	10 91
Collar finishers	[illegible]	5	18	25	20	9	1	9	1	1	91	8 69
Universal press operators	------	------	1	1	6	------	------	------	------	------	8	8 63
Hand ironers	------	1	5	21	33	10	------	2	2	------	74	8 95
Folders	2	1	17	9	17	3	------	1	1	1	52	8 41
Starchers	1	2	21	11	14	6	2	10	1	3	71	9 04
Seamstresses	------	2	10	11	15	5	------	4	2	1	50	8 91
Forewomen	------	------	------	------	------	1	2	3	4	10	20	14 10
Call offices:												
Time rate	------	4	2	1	------	------	------	------	------	------	7	6 64
Commission rate	163	49	3	4	1	------	------	------	------	------	220	5 34
Miscellaneous	------	2	12	7	4	1	------	2	------	2	30	8 51
Total time rate	17	151	505	258	250	86	21	91	22	42	1,443	$8 36
Per cent	1.2	10.5	35.0	17.9	17.4	5.9	1.4	6.4	1.5	2.8	100.0	
Total commission rate	163	49	3	4	1	------	------	------	------	------	220	5 34
Per cent	74.1	22.2	1.4	1.8	.5	------	------	------	------	------	100.0	
Total	180	200	508	262	251	86	21	91	22	42	1,663	$7 96
Per cent	10.7	12.0	30.7	15.8	15.3	5.2	1.2	5.4	1.2	2.5	100.0	

TABLE VII—Continued.

Actual Number of Women employed in the Laundry Industry, on time system of payment, by Occupations, receiving classified weekly rates of pay.

Oakland—Number of establishments, 17.

Occupation	$5.00 to $5.99	$6.00 to $6.99	$7.00 to $7.99	$8.00 to $8.99	$9.00 to $9.99	$10.00 to $10.99	$11.00 to $11.99	$12.00 to $12.99	$13.00 to $14.99	$15.00 and over	Total	Average rate of pay
Markers, distributers	------	------	5	8	5	7	2	6	1	14	48	$11 55
Shakers	------	1	20	2	2	------	------	------	------	------	25	7 28
Mangle hands	------	6	54	121	21	5	2	2	------	------	211	8 04
Stackers	------	------	------	------	2	1	------	1	------	------	4	10 13
Shirt press operators	------	------	------	1	------	------	1	1	3	------	6	11 92
Body ironers	------	------	------	5	21	13	4	3	------	------	46	9 61
Sleevers	------	------	------	7	3	1	------	------	------	------	11	8 55
Neckband, yoke, cuff press operators	------	------	------	6	7	2	------	------	------	------	15	8 83
Finishers	------	------	------	------	3	1	------	2	2	------	8	10 93
Collar finishers	------	------	1	6	14	4	2	2	------	------	29	9 28
Universal press operators	------	------	------	------	------	------	------	------	------	------	------	------
Hand ironers	------	------	------	6	3	7	4	32	2	2	56	11 32
Folders	------	------	------	7	3	------	------	1	------	------	11	8 68
Starchers	------	------	1	2	11	2	------	1	------	1	18	9 50
Seamstresses	------	------	1	3	6	3	------	1	------	------	14	9 11
Forewomen	------	------	------	------	------	------	1	------	------	1	2	14 50
Call offices	------	------	------	------	------	------	------	------	------	------	------	------
Miscellaneous	------	------	------	------	------	------	------	------	------	------	------	------
Total	------	7	82	174	101	46	16	52	8	18	504	$9 18
Per cent	------	1.4	16.3	34.7	20.0	9.1	3.2	10.3	1.4	3.6	100.0	

Fresno, Stockton and San Jose—Number of establishments, 12.

Occupation	$5.00 to $5.99	$6.00 to $6.99	$7.00 to $7.99	$8.00 to $8.99	$9.00 to $9.99	$10.00 to $10.99	$11.00 to $11.99	$12.00 to $12.99	$13.00 to $14.99	$15.00 and over	Total	Average rate of pay
Markers, distributers	------	------	------	2	------	2	------	1	------	2	7	$11 43
Shakers	------	------	------	1	------	------	------	------	------	------	1	8 00
Mangle hands	------	------	6	43	56	10	------	2	------	------	117	8 73
Stackers	------	------	------	------	------	------	------	------	------	------	------	------
Shirt press operators	------	------	------	------	------	2	------	1	1	1	5	12 30
Body ironers	------	------	------	------	3	8	1	7	------	3	22	11 32
Sleevers	------	------	------	1	5	2	------	------	------	------	8	9 13
Neckband, yoke, cuff press operators	------	------	------	2	8	3	------	1	------	------	14	9 30
Finishers	------	------	------	------	------	------	------	4	1	2	7	13 07
Collar finishers	------	------	2	1	4	2	1	5	------	------	15	9 99
Universal press operators	------	------	------	------	------	------	------	------	------	------	------	------
Hand ironers	------	------	2	------	6	21	------	16	------	1	46	10 77
Folders	------	------	1	------	1	2	------	1	------	------	5	9 80
Starchers	------	------	------	1	5	2	------	1	------	1	10	10 10
Seamstresses	------	------	1	------	5	1	------	------	------	------	7	8 80
Forewomen	------	------	------	------	------	------	------	------	3	5	8	14 75
Call offices	------	------	------	------	------	------	------	------	------	------	------	------
Miscellaneous	------	------	------	------	------	------	------	------	------	------	------	------
Total	------	------	12	51	93	55	2	39	5	15	272	$9 89
Per cent	------	------	4.4	18.8	34.2	20.1	.7	14.3	1.9	5.6	100.0	

TABLE VII—Continued.

Actual Number of Women employed in the Laundry Industry, on time system of payment, by Occupations, receiving classified weekly rates of pay.

Pasadena—Number of establishments, 4.

Occupation	$5.00 to $5.99	$6.00 to $6.99	$7.00 to $7.99	$8.00 to $8 99	$9.00 to $9.99	$10.00 to $10.99	$11.00 to $11.99	$12.00 to $12.99	$13.00 to $14.99	$15.00 and over	Total	Average rate of pay
Markers, distributers		1		3	1	1	1	2		2	11	$11 05
Shakers		6	8	6							20	7 00
Mangle hands			6	34	6	3					49	8 28
Stackers				1		1					2	9 00
Shirt press operators						1				1	2	12 50
Body ironers					3	1					4	9 25
Sleevers			1	2	1						4	8 00
Neckband, yoke, cuff press operators		1		2	3	1					7	8 43
Finishers						2			1	1	4	12 38
Collar finishers			2	3	4	2					11	8 55
Universal press operators				1							1	8 00
Hand ironers				4	1	1		1			7	9 00
Folders			1	1							2	7 50
Starchers				1	2	2	1	1			7	9 86
Seamstresses				1	2	1					4	9 00
Forewomen								2		2	4	13 63
Call offices												
Miscellaneous												
Total		8	18	59	23	16	2	6	1	6	139	$8 83
Per cent		5.8	12.9	42.5	16.6	11.5	1.4	4.3	.7	4.3	100.0	

Colton, Riverside and San Bernardino—Number of establishments, 5.

Occupation	$5.00 to $5.99	$6.00 to $6.99	$7.00 to $7.99	$8.00 to $8 99	$9.00 to $9.99	$10.00 to $10.99	$11.00 to $11.99	$12.00 to $12.99	$13.00 to $14.99	$15.00 and over	Total	Average rate of pay
Markers, distributers			2	1	4		1	4	1		13	$10 04
Shakers		16	1								17	6 15
Mangle hands		14	22	1	2						39	6 95
Stackers												
Shirt press operators			1			1		1			3	9 83
Body ironers			1		2	1					4	8 88
Sleevers			1								1	7 50
Neckband, yoke, cuff press operators			1								1	7 50
Finishers		1	2			1					4	7 75
Collar finishers			2	1	1	1					5	8 30
Universal press operators			2	1							3	7 67
Hand ironers		1			5						6	8 50
Folders		1									1	6 60
Starchers			2	1	1						4	8 13
Seamstresses												
Forewomen					1		1		2		4	12 00
Call offices												
Miscellaneous		3	1								4	6 50
Total		36	38	5	16	4	2	5	3		109	$7 76
Per cent		33.0	34.9	4.6	14.7	3.7	1.8	4.6	2.7		100.0	

TABLE VII—Continued.

Summary of the State.—Actual Number of Women employed in the Laundry Industry, on time system of payment, by Occupations, receiving classified weekly rates of pay.

Number of establishments, 84.

Occupation	$5.00 to $5.99	$6.00 to $6.99	$7.00 to $7.99	$8.00 to $8.99	$9.00 to $9.99	$10.00 to $10.99	$11.00 to $11.99	$12.00 to $12.99	$13.00 to $14.99	$15.00 and over	Total	Average weekly rate
Markers, distributers	------	27	57	67	74	44	15	55	13	74	426	$10 56
Shakers	------	113	73	120	5	1	------	------	------	------	312	7 11
Mangle hands	7	32	397	583	192	35	4	5	1	1	1,257	8 04
Stackers	------	------	7	10	7	18	2	3	------	3	50	9 77
Shirt press operators	------	------	1	1	5	11	7	11	24	7	67	12 28
Body ironers	2	------	3	14	64	99	19	24	4	4	233	10 14
Sleevers	------	------	5	18	31	10	------	1	------	------	65	8 80
Neckband, yoke, cuff press operators	3	7	7	27	57	22	3	2	1	1	130	8 83
Finishers	------	1	2	2	15	14	4	16	8	27	89	12 12
Collar finishers	2	5	25	36	75	31	14	19	2	4	213	9 26
Universal press operators	------	------	3	3	6	------	------	------	------	------	12	8 33
Hand ironers	------	2	7	33	58	56	70	93	20	10	349	10 82
Folders	2	2	19	18	40	14	2	4	1	1	103	8 78
Starchers	1	2	24	17	55	44	5	21	3	6	178	9 66
Seamstresses	------	2	12	16	50	24	1	8	3	3	119	9 40
Forewomen	------	------	------	------	1	1	4	8	13	40	67	15 18
Call offices:												
Time rate	------	4	2	1	------	------	------	------	------	------	7	6 64
Commission	163	49	3	4	1	------	------	------	------	------	220	5 34
Miscellaneous	------	5	13	10	7	3	1	2	------	2	43	8 48
Total time rate	17	202	657	976	742	427	151	272	93	183	3,720	$9 22
Per cent	.5	5.4	17.2	26.5	20.0	11.6	4.1	7.3	2.5	4.9	100.0	
Total commission rate	163	49	3	4	1	------	------	------	------	------	220	5 34
Per cent	74.1	22.2	1.4	1.8	.5	------	------	------	------	------	100.0	
Total	180	251	660	980	743	427	151	272	93	183	3,940	$9 01
Per cent	4.6	6.4	16.8	24.9	18.9	10.8	3.8	6.9	2.3	4.6	100.0	

Summary of the State—Rates of pay of Women, Cumulative Per Cent.

City	Cumulative per cent of women receiving										
	Less than $6.00	Less than $7.00	Less than $8.00	Less than $9.00	Less than $10.00	Less than $11.00	Less than $12.00	Less than $13.00	Less than $15.00	$15.00 and over	Total
San Francisco time rate	------	------	.2	34.3	55.4	72.7	81.4	87.6	91.8	8.2	100.0
Los Angeles time rate	1.2	11.7	46.7	64.6	82.0	87.9	89.3	95.7	97.2	2.8	100.0
Los Angeles commission rate	74.1	96.3	97.7	99.5	100.0	------	------	------	------	------	------
Oakland time rate	------	1.4	17.7	52.4	72.4	81.5	84.7	95.0	96.4	3.6	100.0
Fresno, Stockton, San Jose time rate	------	------	4.4	23.2	57.4	77.5	78.2	92.5	94.4	5.6	100.0
Pasadena time rate	------	5.8	18.7	61.2	77.8	89.3	90.7	95.0	95.7	4.3	100.0
Colton, Riverside, San Bernardino	------	33.0	67.9	72.5	87.2	90.0	92.7	97.3	100.0	------	------
Total time rate	.5	5.9	23.1	49.6	69.6	81.2	85.3	92.6	95.1	4.9	100.0
Total commission rate	74.1	96.3	97.7	99.5	100.0						
Total	4.6	11.0	27.8	52.7	71.6	82.4	86.2	93.1	95.4	4.6	100.0

In connection with the pay roll data for 1916 embodied in this report, a comparison with the rates of pay and earnings of women in the laundry industry in 1914 is herewith given. The following table gives the rates of pay of time workers and the earnings of piece and commission workers in 20 identical establishments in San Francisco, 19 establishments in Los Angeles, and 11 establishments in Oakland for one week in May or June, 1914, and one week in January, 1916. Two establishments in San Francisco had consolidated during that period and three establishments in Los Angeles had consolidated into one. The pay roll data given include all the women in the consolidating establishments.

In the number of women employed some difference is doubtless due to the fact that the pay rolls for 1914 were taken in the early summer and those for 1916 in the winter, to which fact is partly due the increase in numbers of women employed in Los Angeles. The figures for San Francisco show an increase of 2 per cent in the number of women employed. Los Angeles time workers show an increase of 13 per cent; pieceworkers, an increase of 22 per cent, and commission (office agents) workers, an increase of 7 per cent. The number of time workers in Oakland decreased 5½ per cent, and the pieceworkers increased from 2 to 9.

In rates of pay the cumulative percentages by intervals show a slight increase in rates in San Francisco, the principal change being that 1.2 per cent of the women have advanced from the "$11.00 to $11.99" class to the "$12.00 and over" interval. In Los Angeles 18 women, or 1.4 per cent of all the women, appear in the "$5.00 to $5.99" interval, where in 1914 none of the actual workers received less than $6.00 per week; however, the cumulative per cent receiving less than $7.00 in 1916 was smaller than the per cent receiving less than $7.00 in 1914. The number receiving over $9.00 was .4 of 1 per cent greater in 1916 than in 1914, a higher per cent falling in the "$9.00 to $9.99" interval, and slightly less in the higher intervals. Pieceworkers in Los Angeles show a slightly larger per cent receiving less than $6.00 per week in 1916 than in 1914; more receiving from $8.00 to $10.00 in 1916 than in 1914, and less receiving $12.00 and over. Of the commission (office agents) workers, 14.2 per cent more women received less than $6.00 per week in 1916 than in 1914. In Oakland the rates of timeworkers show 2.4 per cent more women receiving over $9.00 in 1916 than in 1914, but 1.2 per cent less women receiving $12.00 and over. In 1914 there were only two pieceworkers in the Oakland establishments, and both received over $12.00; in 1916 the number had increased to nine, four of whom earned over $12.00, and the other five scattered from $5.00 to $12.00.

TABLE VIII.

Number of Women employed, Rates of Pay of Time Workers and Weekly Earnings of Piece and Commission System Workers, in identical establishments* in San Francisco, Los Angeles and Oakland during one week in May or June, 1914, and one week in January, 1916.

City	Number of women receiving:										
	Less than $4.00	$4.00 to $4.99	$5.00 to $5.99	$6.00 to $6.99	$7.00 to $7.99	$8.00 to $8.99	$9.00 to $9.99	$10.00 to $10.99	$11.00 to $11.99	$12.00 and over	Total
San Francisco—time rate:											
Number, 1914	------	------	------	------	4	348	230	176	112	195	1,065
Number, 1916	------	------	------	------	2	357	234	184	98	212	1,087
Los Angeles—time rate:											
Number, 1914	------	------	------	128	403	201	193	78	18	136	1,157
Number, 1916	------	------	18	112	441	252	234	88	14	151	1,310
Los Angeles—piece rate earnings:											
Number, 1914	2	4	9	18	60	34	43	22	26	51	269
Number, 1916	3	7	10	19	52	72	61	43	25	37	329
Los Angeles—commission earnings:											
Number, 1914	------	------	82	49	24	10	5	------	1	------	171
Number, 1916	------	------	113	41	15	9	4	1	------	------	183
Oakland—time rate:											
Number, 1914	------	------	------	------	74	161	68	53	9	80	445
Number, 1916	------	------	------	1	61	154	78	45	13	69	421
Oakland—piece rate earnings:											
Number, 1914	------	------	------	------	------	------	------	------	------	2	2
Number, 1916	------	------	1	------	------	1	1	1	1	4	9

*Among the establishments covered, three plants in Los Angeles had consolidated into one and two in San Francisco had consolidated. Figures for 1914 include all women employed in the consolidating firms.

TABLE VIIIa.

Cumulative Percentages.

City	Cumulative per cent of women receiving										
	Less than $4.00	Less than $5.00	Less than $6.00	Less than $7.00	Less than $8.00	Less than $9.00	Less than $10.00	Less than $11.00	Less than $12.00	$12.00 and over	Total
San Francisco—											
Time rate, 1914	------	------	------	------	.4	33.2	54.8	71.2	81.7	18.3	100.0
Time rate, 1916	------	------	------	------	.2	33.0	54.4	71.4	80.5	19.5	100.0
Los Angeles—											
Time rate, 1914	------	------	------	11.2	45.9	63.2	79.8	86.6	88.2	11.8	100.0
Time rate, 1916	------	------	1.4	10.0	43.5	62.8	80.6	87.3	88.4	11.6	100.0
Piece rate earnings, 1914	.8	2.3	5.7	12.4	34.8	47.2	63.4	71.2	80.9	19.1	100.0
Piece rate earnings, 1916	.9	3.1	6.2	12.0	27.8	49.6	68.1	81.2	88.8	11.2	100.0
Commission earnings, 1914	------	------	47.6	76.4	90.5	96.4	99.4	99.4	100.0	------	100.0
Commission earnings, 1916	------	------	61.8	84.2	92.4	97.3	99.5	100.0	------	------	100.0
Oakland—											
Time rate, 1914	------	------	------	------	16.6	52.7	68.0	79.9	82.0	18.0	100.0
Time rate, 1916	------	------	------	.2	14.9	50.3	69.2	80.0	83.2	16.8	100.0
Piece rate earnings, 1914	------	------	------	------	------	------	------	------	------	100.0	100.0
Piece rate earnings, 1916	------	------	11.1	11.1	11.1	22.2	33.3	44.4	55.5	45.5	100.0

AVERAGE WEEKLY HOURS.

The average weekly hours of all women employed on a time basis was 44.5 per week; 64.8 per cent working between 44 and 48 hours per week; 2.5 per cent over 48 hours, and 13.7 per cent between 40 and 44 hours. The time on the majority of pieceworkers was not recorded, and these incomplete records have not been tabulated. The average hours of the women on commission basis was 47.4 per week.

Pasadena showed the highest average weekly hours, 46.7, due to the policy of the establishments in that city of paying full time to all regular workers. San Francisco ranked second with an average of 45.7 hours, 70 per cent of the workers being employed between 44 and 48 hours per week; 7.8 per cent being recorded as working in excess of 48 hours, of which number 6.9 per cent worked between 48 and 50 hours. No workers outside of San Francisco were recorded on the pay rolls as working in excess of 48 hours per week. It is not to be presumed, however, that infractions of the law occur only in that city but rather that only in San Francisco are the workers paid overtime for work in excess of eight hours per day. Colton, Riverside and San Bernardino show the lowest average weekly hours, 42.4, and Oakland next lowest, 42.8.

The number and per cent of women, working classified average weekly hours, by cities, and the total for the state, is given below:

TABLE IX.

Actual Number and Per Cent of Women employed in the Laundry Industry, by cities, by system of payment, working classified average weekly hours.

City	Eight or less	Over 8 to 16	Over 16 to 24	Over 24 to 32	Over 32 to 36	Over 36 to 40	Over 40 to 44	Over 44 to 48	Over 48 to 50	Over 50	Total	Average weekly hours
San Francisco — time workers:												
Number	6	6	23	24	26	72	122	875	87	12	1,253	45.7
Per cent	.5	.5	1.8	1.9	2.1	5.7	9.7	70.0	6.9	.9	100.0	
Los Angeles—time workers:												
Number	31	26	34	67	48	96	211	930	------	------	1,443	44.2
Per cent	2.2	1.8	2.4	4.7	3.4	6.7	14.6	64.2	------	------	100.0	
Los Angeles — commission workers:												
Number	3	1	------	5	4	3	5	199	------	------	220	47.4
Per cent	1.4	.5	------	2.4	1.9	1.4	2.3	90.1	------	------	100.0	
Oakland—time workers:												
Number	2	4	14	25	30	85	112	232	------	------	504	42.8
Per cent	.4	.8	2.8	5.0	6.0	17.0	22.2	45.8	------	------	100.0	
Fresno, Stockton, San Jose—time workers:												
Number	1	3	4	16	18	26	69	135	------	------	272	43.4
Per cent	.4	1.1	1.4	5.8	6.6	9.5	25.3	49.9	------	------	100.0	
Pasadena—time workers:												
Number	3	2	3	4	2	1	12	112	------	------	139	46.7
Per cent	2.2	1.5	2.2	2.9	1.5	.7	8.7	80.3	------	------	100.0	
Colton, Riverside, San Bernardino — time workers:												
Number	3	3	4	4	11	9	9	66	------	------	109	42.4
Per cent	2.7	2.7	3.7	3.7	10.1	8.3	8.3	60.5	------	------	100.0	
Total time workers:												
Number	46	44	82	140	135	289	535	2,350	87	12	3,720	44.5
Per cent	1.2	1.2	2.2	3.8	3.6	7.8	14.4	63.2	2.3	.3	100.0	
Total commission:												
Number	3	1	------	5	4	3	5	199	------	------	220	47.4
Per cent	1.4	.5	------	2.4	1.9	1.4	2.3	90.1	------	------	100.0	
Total number	49	45	82	145	139	292	540	2,549	87	12	3,940	44.7
Per cent	1.2	1.1	2.1	3.7	3.5	7.4	13.7	64.8	2.2	.3	100.0	

*Weighted averages.

AVERAGE WEEKLY EARNINGS.

The table of rates of pay of women shows 3,720 time workers averaging $9.22 per week, and 220 office agents paid on commission basis averaging (rate of pay not including commissions earned) $5.34. Since the women are paid on an hourly basis and average only 44.7 hours per week, their earnings fall below the rates. In addition to these time and commission workers there were 338 women working on piece rate, whose hours were not given. The complete table of average weekly earnings of all women, by cities and by occupations, is given below:

TABLE X.

Actual Number of Women employed in the Laundry Industry, by occupations, by system of payment, receiving classified average weekly earnings.

San Francisco—Number of establishments, 25.

Occupation	Less than $4.00	$4.00 to $4.99	$5.00 to $5.99	$6.00 to $6.99	$7.00 to $7.99	$8.00 to $8.99	$9.00 to $9.99	$10.00 to $11.99	$12.00 to $14.99	$15.00 and over	Total	Average weekly earnings
Markers, distributers	------	------	------	1	3	14	6	13	11	25	73	$13 37
Shakers	13	1	6	10	22	59	1	1	------	------	113	7 61
Mangle hands	6	13	3	17	42	266	53	9	1	1	411	8 33
Stackers	------	------	------	1	3	1	6	10	1	2	24	10 28
Shirt press operators	------	------	------	------	------	------	------	3	19	4	26	13 70
Body ironers	------	------	1	1	3	10	12	67	9	1	104	10 42
Sleevers	1	------	------	------	1	6	11	2	------	------	21	9 17
Neckband, yoke, cuff press operators	------	------	------	------	3	11	20	15	------	------	49	9 40
Finishers	------	------	------	------	------	3	2	2	13	8	28	13 67
Collar finishers	------	------	------	3	2	13	21	17	5	1	62	9 79
Universal press operators	------	------	------	------	------	------	------	------	------	------	------	------
Hand ironers	2	------	3	5	5	6	19	70	47	3	160	11 01
Folders	------	------	------	------	1	8	15	6	2	------	32	9 23
Starchers	------	------	------	------	2	5	31	24	6	------	68	9 96
Seamstresses	------	------	------	1	2	8	19	10	2	2	44	9 86
Forewomen	------	------	------	------	------	------	------	------	8	21	29	16 57
Call offices	------	------	------	------	------	------	------	------	------	------	------	------
Miscellaneous	1	------	------	------	1	2	2	3	------	------	9	9 00
Total	23	14	13	39	90	412	218	252	124	68	1,253	$9 89
Per cent	1.8	1.1	1.0	3.1	7.2	32.9	17.4	20.1	9.9	5.5	100.0	

Los Angeles—Number of establishments, 21.

Markers, distributers	18	4	20	31	45	51	29	40	27	9	274	$8 92
Shakers:												
Time rate	21	17	49	30	14	4	1	------	------	------	136	5 73
Piece rate	1	------	------	2	7	------	------	------	------	------	10	7 10
Mangle hands:												
Time rate	40	21	33	122	149	52	13	------	------	------	430	6 89
Piece rate	6	4	4	16	34	20	20	7	------	------	111	7 95
Stackers	------	------	------	5	5	7	2	1	------	------	20	8 02
Shirt press operators:												
Time rate	------	------	------	2	2	2	6	10	2	1	25	10 02
Piece rate	------	------	------	------	------	------	1	1	1	------	3	11 43
Body ironers:												
Time rate	1	5	1	4	5	18	14	4	1	------	53	8 29
Piece rate	------	------	------	1	1	5	8	8	5	1	29	10 40
Sleevers:												
Time rate	------	------	1	3	4	9	2	1	------	------	20	7 98
Piece rate	------	------	------	------	------	------	1	------	------	------	1	9 11
Neckband, yoke, cuff press operators:												
Time rate	4	4	2	8	7	14	5	------	------	------	44	7 17
Piece rate	------	------	------	------	------	2	1	------	------	------	3	9 04
Finishers:												
Time rate	------	1	------	------	5	8	3	10	10	1	38	10 72
Piece rate	------	------	------	------	------	------	------	------	1	------	1	12 01
Collar finishers	3	5	3	10	26	15	15	9	4	1	91	8 20
Universal press operators	------	------	1	1	1	5	------	------	------	------	8	7 96
Hand ironers:												
Time rate	2	1	4	3	21	21	15	3	4	------	74	8 26
Piece rate	10	7	8	16	19	26	19	39	7	3	154	8 74

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*Weighted averages.

TABLE X—Continued.

Actual Number of Women employed in the Laundry Industry, by occupations, by system of payment, receiving classified average weekly earnings.

Los Angeles—Continued.

Occupation	Less than $4.00	$4.00 to $4.99	$5.00 to $5.99	$6.00 to $6.99	$7.00 to $7.99	$8.00 to $8.99	$9.00 to $9.99	$10.00 to $11.99	$12.00 to $14.99	$15.00 and over	Total	*Average weekly earnings
Folders:												
Time rate	3	6	3	8	5	18	6	1	1	1	52	7 91
Piece rate	------	------	------	------	------	1	------	------	------	------	1	8 81
Starchers	2	3	2	9	16	9	12	11	5	2	71	8 81
Seamstresses:												
Time rate	1	2	1	7	13	10	7	5	4	------	50	8 22
Piece rate	------	1	------	------	2	2	1	3	------	------	9	8 90
Forewomen	------	------	------	------	------	------	1	4	7	8	20	13 98
Call office:												
Time rate	1	1	2	1	1	1	------	------	------	------	7	5 78
Commission	10	10	120	50	20	6	3	1	------	------	220	5 86
Miscellaneous	7	------	5	2	4	7	2	1	2	------	30	7 55
Total time rate	103	70	127	246	323	251	133	100	67	23	1,443	$7 89
Per cent	7.1	4.8	8.8	16.9	22.4	18.1	9.1	6.8	4.5	1.5	100.0	
Total commission rate	10	10	120	50	20	6	3	1	------	------	220	5 86
Per cent	4.6	4.6	54.6	22.8	9.2	2.4	1.3	.5	------	------	100.0	
Total piece rate	17	12	12	35	63	56	51	58	14	4	322	8 63
Per cent	5.2	3.7	3.7	10.9	19.6	17.6	15.8	18.0	4.3	1.2	100.0	
Total	130	92	259	331	406	313	187	159	81	27	1,985	$7 78
Per cent	6.5	4.6	13.0	16.6	20.8	15.7	9.4	8.0	4.1	1.3	100.0	

Oakland—Number of establishments, 17.

Markers, distributers	------	1	1	3	7	5	2	16	7	6	48	$10 63
Shakers	2	4	11	------	7	1	------	------	------	------	25	6 00
Mangle hands	8	11	14	52	63	45	12	5	1	------	211	7 22
Stackers	------	2	------	------	------	------	------	2	------	------	4	8 96
Shirt press operators	------	------	------	1	------	------	------	3	2	------	6	10 94
Body ironers	------	------	1	4	5	12	11	12	1	------	46	8 94
Sleevers	1	------	1	1	------	6	2	------	------	------	11	7 83
Neckband, yoke, cuff press operators	------	------	1	2	6	3	2	1	------	------	15	7 89
Finishers	------	1	------	------	------	------	3	2	2	------	8	10 47
Collar finishers	1	------	------	4	5	6	7	4	2	------	29	8 76
Hand ironers:												
Time rate	1	------	1	5	6	4	5	25	7	2	56	9 96
Piece rate	------	1	------	------	1	2	------	1	2	2	9	12 25
Folders	1	------	------	2	2	2	3	------	1	------	11	8 25
Starchers	1	------	------	2	6	3	2	3	------	1	18	8 63
Seamstresses	------	------	1	1	3	3	3	2	1	------	14	8 52
Forewomen	------	------	------	------	------	------	------	1	------	1	2	14 50
Call offices	------	------	------	------	------	------	------	------	------	------	------	------
Miscellaneous	------	------	------	------	------	------	------	------	------	------	------	------
Total time rate	15	19	31	77	110	90	52	76	24	10	504	$8 31
Per cent	2.9	3.8	6.2	15.3	21.8	17.8	10.3	15.1	4.8	2.0	100.0	
Total piece rate	------	1	------	------	1	2	------	1	2	2	9	12 25
Per cent	------	11.1	------	------	11.1	22.2	------	11.1	22.3	22.2	100.0	
Totals	15	20	31	77	111	92	52	77	26	12	513	$8 38
Per cent	2.9	3.9	6.1	15.1	21.7	18.0	9.9	15.0	5.0	2.4	100.0	

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*Weighted averages.

TABLE X—Continued.

Actual Number of Women employed in the Laundry Industry, by occupations, by system of payment, receiving classified average weekly earnings.

Fresno, Stockton, and San Jose—Number of establishments, 12.

Occupation	Less than $4.00	$4.00 to $4.99	$5.00 to $5.99	$6.00 to $6.99	$7.00 to $7.99	$8.00 to $8.99	$9.00 to $9.99	$10.00 to $11.99	$12.00 to $14.99	$15.00 and over	Total	*Average weekly earnings
Markers, distributers			1			1		2	2	1	7	$11 13
Shakers					1						1	7 42
Mangle hands		1	8	14	20	32	35	6	1		117	8 15
Stackers												
Shirt press operators						2	1		1	1	5	11 11
Body ironers	3		1	2	2	3	6	3	1	1	22	9 26
Sleevers			2		2	3	1				8	7 51
Neckband, yoke, cuff press operators			1	3	1	6	1	2			14	8 13
Finishers			1		1	1	1		1	2	7	11 99
Collar finishers			1	3	1	4	1	5			15	8 80
Universal press operators												
Hand ironers:												
Time rate	1	1	1	2	3	8	14	13	2	1	46	9 31
Piece rate						2	2		1		5	9 78
Folders			1			2	1	1			5	9 01
Starchers						6	2	1		1	10	9 45
Seamstresses		1		1	2	2	1				7	7 87
Forewomen								1	3	4	8	14 19
Call offices												
Miscellaneous												
Total time rate	4	3	17	25	33	70	64	34	11	11	272	$8 92
Per cent	1.5	1.1	6.3	9.2	12.2	25.7	23.5	12.5	4.0	4.0	100.0	
Total piece rate						2	2		1		5	9 78
Per cent						40.0	40.0		20.0		100.0	
Total	4	3	17	25	33	72	66	34	12	11	277	$8 94
Per cent	1.4	1.1	6.1	9.0	11.9	26.1	23.9	12.3	4.3	3.9	100.0	

Pasadena—Number of establishments, 4.

Occupation	Less than $4.00	$4.00 to $4.99	$5.00 to $5.99	$6.00 to $6.99	$7.00 to $7.99	$8.00 to $8.99	$9.00 to $9.99	$10.00 to $11.99	$12.00 to $14.99	$15.00 and over	Total	*Average weekly earnings
Markers, distributers				1		3	1	2	2	2	11	$10 76
Shakers	1	3	5	3	3	5					20	6 42
Mangle hands	3	2	1	2	11	23	4	3			49	7 77
Stackers						1		1			2	9 00
Shirt press operators	1						1				2	8 43
Body ironers							3	1			4	9 25
Sleevers				1		2	1				4	7 93
Neckband, yoke, cuff press operators	1			1	1	1	3				7	7 97
Finishers							1	1	1	1	4	12 35
Collar finishers				1	3	1	4	2			11	8 34
Universal press operators					1						1	7 66
Hand ironers:												
Time rate					1	3	2		1		7	8 87
Piece rate	4	1	4	3	6	8	6	7	2		41	8 57
Folders					2						2	7 33
Starchers		1					2	3	1		7	9 73
Seamstresses						2	1	1			4	8 88
Forewomen									3	1	4	13 20
Call offices												
Miscellaneous												
Total time rate	6	6	6	9	22	41	23	14	8	4	139	$8 45
Per cent	4.3	4.3	4.3	6.5	15.8	29.5	16.6	10.0	5.8	2.9	100 0	
Total piece rate	4	1	4	3	6	8	6	7	2		41	8 57
Per cent	9.8	2.5	9.8	7.3	14.6	19.5	14.6	17.1	4.8		100.0	
Total	10	7	10	12	28	49	29	21	10	4	180	$8 47
Per cent	5.7	3.4	5.7	6.7	15.6	27.2	16.1	11.7	5.7	2.2	100.0	

*Weighted averages.

TABLE X—Continued.

Actual Number of Women employed in the Laundry Industry, by occupations, by system of payment, receiving classified average weekly earnings.

Colton, Riverside, and San Bernardino—Number of establishments, 5.

Occupation	Less than $4.00	$1.00 to $4.99	$5.00 to $5.99	$6.00 to $6.99	$7.00 to $7.99	$8.00 to $8.99	$9.00 to $9.99	$10.00 to $11.99	$12.00 to $14.99	$15.00 and over	Total	*Average weekly earnings
Markers, distributers	2	------	------	------	2	3	3	1	2	------	13	$8 81
Shakers	2	3	5	7	------	------	------	------	------	------	17	5 65
Mangle hands	7	5	6	11	8	------	2	------	------	------	39	5 90
Stackers	------	------	------	------	------	------	------	------	------	------	------	------
Shirt press operators	------	------	------	1	------	------	1	1	------	------	3	9 28
Body ironers	------	------	------	------	2	1	------	1	------	------	4	8 22
Sleevers	------	------	------	------	1	------	------	------	------	------	1	7 50
Neckband, yoke, cuff press operators	------	------	------	------	1	------	------	------	------	------	1	7 50
Finishers	1	------	1	------	1	1	------	------	------	------	4	6 45
Collar finishers	------	------	------	1	2	------	1	1	------	------	5	7 91
Universal press operators:												
Time rate	------	------	1	------	1	1	------	------	------	------	3	6 78
Piece rate	------	------	------	------	1	------	------	------	------	------	1	7 38
Hand ironers:												
Time rate	------	1	------	------	------	2	3	------	------	------	6	8 08
Piece rate	------	2	1	2	3	------	1	1	------	------	10	6 96
Folders	------	1	------	------	------	------	------	------	------	------	1	4 31
Starchers	------	------	------	------	2	1	1	------	------	------	4	8 10
Seamstresses	------	------	------	------	------	------	------	------	------	------	------	------
Forewomen	------	------	------	------	------	------	1	1	2	------	4	11 78
Call offices	------	------	------	------	------	------	------	------	------	------	------	------
Miscellaneous	------	------	2	1	1	------	------	------	------	------	4	5 65
Total time rate	12	10	15	21	21	9	12	5	4	------	109	$7 06
Per cent	11.0	9.2	13.8	19.3	19.3	8.2	11.0	4.6	3.6	------	100.0	
Total piece rate	------	2	1	2	4	------	1	1	------	------	11	6 98
Per cent	------	18.2	9.1	18.2	36.3	------	9.1	9.1	------	------	100.0	
Total	12	12	16	23	25	9	13	6	4	------	120	$7 05
Per cent	10.0	10.0	13.3	19.3	20.8	7.5	10.8	5.0	3.3	------	100.0	

Summary of the State—Actual Number of Women employed in the Laundry Industry, by occupations, by system of payment, receiving classified average weekly earnings.

Number of establishments, 84.

Markers, distributers	20	5	22	36	57	77	41	74	51	43	426	$10 00
Shakers:												
Time rate	39	28	76	50	47	69	2	1	------	------	312	6 44
Piece rate	1	------	------	2	7	------	------	------	------	------	10	7 10
Mangle hands:												
Time rate	64	53	65	218	293	418	119	23	3	1	1,257	7 56
Piece rate	6	4	4	16	34	20	20	7	------	------	111	7 95
Stackers	------	2	------	6	8	9	8	14	1	2	50	9 21
Shirt press operators:												
Time rate	1	------	------	4	2	4	9	17	24	6	67	11 60
Piece rate	------	------	------	------	------	------	1	1	1	------	3	11 43
Body ironers:												
Time rate	4	5	4	11	17	44	46	88	12	2	233	9 47
Piece rate	------	------	------	1	1	5	8	8	5	1	29	10 40
Sleevers:												
Time rate	2	------	4	5	8	26	17	3	------	------	65	8 27
Piece rate	------	------	------	------	------	------	1	------	------	------	1	9 11
Neckband, yoke, cuff press operators:												
Time rate	5	4	4	14	19	35	31	18	------	------	130	8 25
Piece rate	------	------	------	------	------	2	1	------	------	------	3	9 04
Finishers:												
Time rate	1	2	2	------	7	13	10	15	27	12	89	11 63
Piece rate	------	------	------	------	------	------	------	------	1	------	1	12 01

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*Weighted averages.

TABLE X—Continued.

Summary of the State—Actual Number of Women employed in the Laundry Industrial, by occupations, by system of payment, receiving classified average weekly earnings.

Number of establishments, 84—Continued.

Occupation	Less than $4.00	$4.00 to $4.99	$5.00 to $5.99	$6.00 to $6.99	$7.00 to $7.99	$8.00 to $8.99	$9.00 to $9.99	$10.00 to $11.99	$12.00 to $14.99	$15.00 and over	Total	*Average weekly earnings
Collar finishers	4	5	4	22	39	39	49	38	11	2	213	8 79
Universal press operators:												
Time rate	------	------	2	1	3	6	------	------	------	------	12	7 70
Piece rate	------	------	------	------	1	------	------	------	------	------	1	7 38
Hand ironers:												
Time rate	6	3	9	15	36	44	58	111	61	6	349	9 92
Piece rate	14	11	13	21	29	38	28	48	12	5	219	8 82
Folders:												
Time rate	4	7	4	10	10	30	25	8	4	1	103	8 40
Piece rate	------	------	------	------	------	1	------	------	------	------	1	8 81
Starchers	3	4	2	11	26	24	50	42	12	4	178	9 31
Seamstresses:												
Time rate	1	3	2	10	20	25	31	18	7	2	119	8 88
Piece rate	------	1	------	------	2	2	1	3	------	------	9	8 90
Forewomen	------	------	------	------	------	------	2	7	23	35	67	14 97
Call offices:												
Time rate	1	1	2	1	1	1	------	------	------	------	7	5 78
Commission	10	10	120	50	20	6	3	1	------	------	220	5 86
Miscellaneous	8	------	7	3	6	9	4	4	2	------	43	7 74
Total time rate	163	122	209	417	599	873	502	481	238	116	3,720	$8 71
Per cent	4.4	3.3	5.6	11.2	16.1	23.5	13.3	12.9	6.5	3.2	100.0	
Total commission	10	10	120	50	20	6	3	1	------	------	220	5 86
Per cent	4.6	4.6	54.6	22.8	9.2	2.4	1.3	.5	------	------	100.0	
Total piece rate	21	16	17	40	74	68	60	67	19	6	388	8 70
Per cent	5.4	4.2	4.4	10.2	19.0	17.6	15.5	17.2	4.9	1.6	100.0	
Total	194	148	346	507	693	947	565	549	257	122	4,328	$8 55
Per cent	4.5	3.4	8.0	11.8	16.1	22.0	13.0	12.6	5.8	2.8	100.0	

*Weighted averages.

Summary of the State—Earnings of Women, Cumulative Percentages.

City	Cumulative per cent of women receiving										
	Less than $4.00	Less than $5.00	Less than $6.00	Less than $7.00	Less than $8.00	Less than $9.00	Less than $10.00	Less than $12.00	Less than $15.00	$15.00 and over	Total
San Francisco—											
Time rate	1.8	2.9	3.9	7.0	14.2	47.1	64.5	84.6	94.5	5.5	100.0
Los Angeles—											
Time rate	7.1	11.9	20.7	37.6	60.0	78.1	87.2	94.0	98.5	1.5	100.0
Commission rate	4.6	9.2	63.8	86.6	95.8	98.2	99.5	100.0	100.0	------	100.0
Piece rate	5.2	8.9	12.6	23.5	43.1	60.7	76.5	94.5	98.8	1.2	100.0
Oakland—											
Time rate	2.9	6.7	12.9	28.2	50.0	67.8	78.1	93.2	98.0	2.0	100.0
Piece rate	------	11.1	11.1	11.1	22.2	44.4	44.4	55.5	77.8	22.2	100.0
Fresno, Stockton, San Jose—											
Time rate	1.5	2.6	8.9	18.1	30.3	56.0	79.5	92.0	96.0	4.0	100.0
Piece rate	------	------	------	------	------	40.0	80.0	80.0	100.0	------	100.0
Pasadena—											
Time rate	4.3	8.6	12.9	19.4	35.2	64.7	81.3	91.3	97.1	2.9	100.0
Piece rate	9.8	12.3	22.1	29.4	44.0	63.5	78.1	95.2	100.0	------	------
Colton, Riverside, San Bernardino—											
Time rate	11.0	20.2	34.0	53.3	72.6	80.8	91.8	96.4	100.0	------	------
Piece rate	------	18.2	27.3	45.5	81.8	81.8	90.9	100.0	100.0	------	100.0
Total time rate	4.4	7.7	13.3	24.5	40.6	64.1	77.4	90.3	96.8	3.2	100.0
Total commission rate	4.6	9.2	63.8	86.6	95.8	98.2	99.5	100.0	100.0	------	100.0
Total piece rate	5.4	9.6	14.0	24.2	43.2	61.8	77.3	94.5	98.4	1.6	100.0
Total	4.5	7.9	15.9	27.7	43.8	65.8	78.8	91.4	97.2	2.8	100.0

RATES OF PAY, AVERAGE HOURS AND EARNINGS OF MEN.

A total of 1,686 men were employed in the laundries investigated. Of this number 533 were employed in the wash room, at work in which they did not compete with women. The balance were found in occupations in which women are engaged, some being employed at the more arduous tasks so that they did not compete directly with women, and some engaged in identical work. A total of 923 men were listed as markers and distributers, shakers, mangle hands, stackers, body ironers, shirt, cuff, neckband and yoke press operators, finishers, collar finishers, and hand ironers. A comparison of the rates of men and women by occupations shows the men receiving decidedly higher rates and proportionately still higher earnings. The average rate of all men was $15.05, and their average earnings $14.89, a difference of only $0.16, or 1.1 per cent. Overtime is common in many laundries and particularly in certain occupations, and average weekly earnings in some occupations were greater than average weekly rates of pay. A table of comparative rates and earnings of men and women by occupations is not given, because of the fact that their tasks are not always identical. In some establishments a certain number of men are employed as a measure of safety in order to insure getting the work out in emergencies where the women could not work overtime.

The rate of pay of men in the union laundries in San Francisco is based upon a 48-hour week, with overtime at rate and a half. In the French laundries the men are employed on a monthly or weekly basis, and in many cases work on an indefinite system of hours. In Los Angeles one establishment worked upon a 48-hour week; 13 on a 54-hour week; three on a 60-hour week, and four small laundries worked upon a weekly rather than hourly basis.

The payment of overtime in Los Angeles is not systematized. In five plants the distinct hourly basis of payment was found, overtime being paid at regular rates. In the other plants a general understanding about hours existed, but no definite payment for overtime. In Oakland the 54-hour week is in effect in the laundries. Five establishments paid overtime, but the others seemed to be operating on a general weekly basis. In Fresno, Stockton and San Jose, 5 of the 12 establishments paid upon a 48-hour week basis, and seven on a 54-hour week. In the larger plants overtime was paid, but in the small plants the system was vague. In Pasadena the 54-hour week exists in all the plants, and payment is on a weekly basis, no overtime being recorded. In Riverside, Colton and San Bernardino the 54-hour week is found in the five plants, with overtime in two plants.

In San Francisco the average weekly earnings were $16.36, or 11 cents less than the average weekly rate, the earnings being augmented by considerable payment of overtime. In Los Angeles the average earnings, $12.78, were 13 cents less than the average weekly rate, the weighted average of earnings being increased by the fact that 23 per cent of the men employed worked less than four weeks, these workers being the low-rate men as a rule. In Oakland the average weekly earnings, $15.75, fell 63 cents below the average weekly rate, largely due to a strict hourly system, rather than weekly system, of payment. In Fresno, Stockton and San Jose the payment of considerable overtime brought the average weekly earnings 64 cents above the average weekly rate. In Pasadena the average weekly earnings fell 26 cents below the average weekly rate on account of some short time. In Riverside, Colton and San Bernardino 11.6 per cent of the men in low-paid occupations worked one week only, and this, together with the payment of overtime, brought the average weekly earnings, $15.00, 32 cents in excess of the average weekly rate.

The number of men, average rates of pay and average earnings, by occupations and cities, are given in the following table:

TABLE XI.

Number of Men Employed in the Laundry Industry, by Cities, by Occupations, With Average Weekly Rates of Pay and Average Weekly Earnings.

Occupation	San Francisco			Los Angeles		
	Number of men employed	Average weekly rate	Average weekly earnings*	Number of men employed	Average weekly rate	Average weekly earnings*
Markers and distributers	259	$17 28	$17 25	199	$14 10	$13 94
Washers:						
Time rate	187	18 03	18 02	182	13 54	13 41
Piece rate	----------	----------	----------	6	----------	11 17
Shakers:						
Time rate	35	12 14	9 33	95	8 11	7 91
Piece rate	----------	----------	----------	14	----------	7 61
Mangle hands	70	11 11	11 33	----------	----------	----------
Stackers	----------	----------	----------	4	8 75	8 78
Shirt press operators	6	15 42	15 55	4	10 00	9 17
Body ironers	12	12 67	12 34	----------	----------	----------
Neckband, yoke, cuff press operators	1	9 00	9 31	3	8 50	7 89
Finishers:						
Time rate	10	16 70	16 38	3	12 67	12 78
Piece rate	----------	----------	----------	1	----------	12 29
Collar finishers	----------	----------	----------	3	8 50	8 50
Hand ironers	12	16 33	16 31	6	15 25	15 56
Starchers	34	14 61	14 56	30	12 15	11 90
Foremen	16	27 08	27 09	23	21 76	21 57
Miscellaneous	11	14 70	14 59	34	11 91	11 13
Total time rate	653	$16 47	$16 36	586	$12 91	$12 78
Total piece rate	----------	----------	----------	21	----------	8 90
Total	653	$16 47	$16 36	607	----------	$12 65

*Weighted averages.

TABLE XI—Continued.

Number of Men Employed in the Laundry Industry, by Cities, by Occupations, With Average Weekly Rates of Pay and Average Weekly Earnings.

Occupation	Oakland			Fresno, Stockton and San Jose		
	Number of men employed	Average weekly rate	Average weekly earnings*	Number of men employed	Average weekly rate	Average weekly earnings*
Markers and distributers	79	$17 85	$17 03	43	$18 39	$20 43
Washers	86	16 39	15 79	35	17 73	17 42
Shakers	5	7 00	6 99	--------	--------	--------
Mangle hands	2	9 00	8 25	--------	--------	--------
Stackers	1	12 00	7 50	--------	--------	--------
Shirt press operators	6	16 69	16 59	2	16 50	16 38
Body ironers	1	13 50	12 48	--------	--------	--------
Neckband, yoke, cuff press operators	1	11 00	10 31	--------	--------	--------
Finishers	10	15 55	15 15	2	14 25	12 85
Collar finishers	--------	--------	--------	2	12 50	12 62
Hand ironers	1	16 50	16 50	2	12 75	12 75
Starchers	19	13 43	13 21	11	16 36	16 03
Foremen	2	26 25	26 25	--------	--------	--------
Miscellaneous	1	15 00	15 35	--------	--------	--------
Total	214	$16 38	$15 75	97	$17 56	$18 20

*Weighted averages.

TABLE XI—Continued.

Number of Men Employed in the Laundry Industry, by Cities, by Occupations, With Average Weekly Rates of Pay and Average Weekly Earnings.

Occupation	Pasadena			Colton, Riverside and San Bernardino		
	Number of men employed	Average weekly rate	Average weekly earnings*	Number of men employed	Average weekly rate	Average weekly earnings*
Markers and distributers	36	$14 63	$13 81	6	$17 08	$17 02
Washers	28	13 00	12 83	15	14 10	14 07
Shakers	12	8 50	8 55	--------	--------	--------
Mangle hands	--------	--------	--------	--------	--------	--------
Stackers	--------	--------	--------	--------	--------	--------
Shirt press operators	2	17 00	17 48	--------	--------	--------
Body ironers	2	10 00	10 00	--------	--------	--------
Neckband, yoke, cuff press operators	--------	--------	--------	--------	--------	--------
Finishers	1	14 00	14 00	--------	--------	--------
Collar finishers	--------	--------	--------	--------	--------	--------
Hand ironers	--------	--------	--------	--------	--------	--------
Starchers	5	11 80	11 85	2	15 00	15 00
Foremen	2	13 00	13 00	1	21 50	21 50
Miscellaneous	1	8 00	8 00	2	7 50	3 13
Total	89	$12 96	$12 68	26	$14 63	$15 00

*Weighted averages.

TABLE XI—Continued.

Summary of the State.—Number of Men employed in the Laundry Industry, by Occupations, with Average Weekly Rates of Pay and Average Weekly Earnings.*

Occupation	Number of men employed	Average weekly rate	Average weekly earnings*
Markers and distributers	622	$16 26	$16 19
Washers:			
Time rate	533	15 84	15 71
Piece rate	6	----------	11 17
Shakers:			
Time rate	147	9 07	8 27
Piece rate	14	----------	7 61
Mangle hands	72	11 05	11 24
Stackers	5	9 40	8 52
Shirt press operators	20	14 83	15 41
Body ironers	15	12 37	12 03
Neckband, yoke, cuff press operators	5	9 10	8 66
Finishers:			
Time rate	26	15 50	15 15
Piece rate	1	----------	12 29
Collar finishers	5	10 10	10 15
Hand ironers	21	15 67	15 78
Starchers	101	13 71	13 61
Foremen	44	23 49	23 45
Miscellaneous	49	12 34	11 89
Total time rate	1,665	$15 05	$14 96
Total piece rate	21	----------	8 90
Total	1,686	$15 05	$14 89

*Weighted averages.

LABOR COST.

From the business point of view labor cost and not the rate of wages is the most important item to be considered in the matter of the payment of labor. This is particularly the case in the laundry industry where labor is the heaviest item of cost. Power laundries are classed as manufacturing establishments, but they differ from ordinary manufacturing establishments in that they do not convert raw material into finished products, consequently labor is a much larger item than in the ordinary factory.

Supplementary to the data obtained at the time of investigation, information was requested from the laundries upon the value of work done for the period covered by the pay roll data. This information was received from plants employing a majority of the workers concerning whom pay roll data were obtained. In San Francisco the figures on labor cost are based upon the work of 12 laundries which employ 56.4 per cent of all the workers in San Francisco covered in this investigation; in Los Angeles, 12 laundries employing 70.2 per cent of the workers; in Oakland, eight laundries employing 60.9 per cent of the workers; in Fresno, Stockton and San Jose, nine laundries employing 68.5 per cent of the workers; in Pasadena, two laundries employing 57.6 per cent of the workers, and in Colton, Riverside and San Bernardino, four laundries, employing 86.3 per cent of the workers.

The following table gives the value of work done by cities, divided (by per cent) into the classes of work—bundle work, flat work, and rough dry and wet wash. In the laundries in San Francisco doing a larger percentage of bundle work the total labor cost is slightly higher than in the laundries doing a larger percentage of flat work. The reverse is true in Los Angeles. In San Francisco bundle work represents 67.3 per cent and flat work 22.3 per cent of the total work; and in Los Angeles bundle work represents 63.2 per cent and flat work 27.3 per cent. While a very close analysis must take into account many factors, certain illuminating comparisons may be legitimately made. Wet wash and rough dry laundries show a lower labor cost, and the general laundries having a high percentage of this class of work show a proportionately lower labor cost. This accounts in part for the low labor cost in Pasadena. The reports from Fresno, Stockton and San Jose, and Colton, Riverside and San Bernardino did not completely segregate the classes of work.

TABLE XII.

Value of Work Done in Selected Establishments, Percentage of Total Number of Employees represented by Reporting Establishments, with Percentage of Total Value of Work Done represented by Bundle Work, Flat Work, and Rough Dry and Wet Wash, and Productive Labor Cost.

City	Number of establishments reporting	Per cent of total workers employed	Value of work done	Per cent represented by				Productive labor cost
				Bundle work	Flat work	Rough dry; wet wash	Total	
San Francisco	12	56.4	$124,312 01	67.3	22.3	10.4	100.0	37.99
Los Angeles	12	70.2	145,814 81	63.2	27.3	9.5	100.0	33.55
Oakland	8	60.9	51,695 73	64.5	24.0	11.5	100.0	35.30
Fresno, Stockton and San Jose	9	68.5	28,049 69	*	*	*	100.0	38.95
Pasadena	2	57.6	17,794 51	61.4	24.5	14.1	100.0	31.15
Colton, Riverside and San Bernardino	4	86.3	12,362 77	*	*	*	100.0	29.02

*Incomplete separation of classes of work.

The foregoing table shows the highest labor cost to be in Fresno, Stockton and San Jose, with San Francisco second and Oakland third; Los Angeles, Pasadena, and Colton, Riverside and San Bernardino follow in the order named. The following comparison of labor cost with the average weekly earnings of men and women by cities demonstrates that the higher wages are accompanied by higher labor cost, but not nearly in proportion:

TABLE XIII.

Average Weekly Earnings of Men and Women, and Productive Labor Cost in Selected Establishments.

City	Women's average weekly earnings	Men's average weekly earnings	Total productive labor cost (per cent)
San Francisco	$9 89	$16 36	37.99
Los Angeles	7 78	12 65	33.55
Oakland	8 38	15 75	35.30
Fresno, Stockton and San Jose	8 94	18 20	38.95
Pasadena	8 47	12 68	31.15
Colton, Riverside and San Bernardino	7 05	15 00	29.02

Too close an analysis can not be made without listing all other possible factors, but it is interesting to note that while the labor cost in San Francisco (37.99) is 12 per cent higher than the labor cost in Los Angeles (33.55), the average weekly earnings of men in San Francisco ($16.36) are 28 per cent higher than the average weekly earnings of men in Los Angeles ($12.65); and the average weekly earnings of women in San Francisco ($9.89) are 27 per cent higher than the average weekly earnings of women in Los Angeles ($7.78).

The separation of the productive labor cost into the five divisions of marking and distributing, wash room, flat-work ironing, finishing departments, and superintendence* is given in the following table, which must, however, be considered in relation to Table XII. The slightly larger percentage of bundle work in San Francisco, for example, would imply a larger proportion of work in the marking and distributing and finishing departments, and a smaller proportion of work in the flat-work department. That is, in making a comparison between the figures for San Francisco and Los Angeles the San Francisco figures for marking and distributing and finishing should be slightly reduced and the figure for flat-work ironing slightly increased. This can not be exactly estimated because bundle work includes an amount of flat work, varying in individual establishments over a wide range.

TABLE XIV.

Productive Labor Cost in Selected Establishments, separated into the Percentages of the Total Value of Work Done represented by Marking and Distributing, Washroom, Flat-work Ironing, Finishing Department and Superintendence.*

City	Marking and distributing	Wash room	Flat-work ironing	Finishing department	Superintendence	Total productive labor cost
San Francisco	9.69	5.12	7.41	14.13	1.64	37.99
Los Angeles	8.65	3.50	7.38	13.09	1.02	33.55
Oakland	8.23	6.47	7.63	12.66	.31	35.30
Fresno, Stockton and San Jose	8.06	6.18	8.84	14.82	1.05	38.95
Pasadena	7.78	3.87	7.11	11.17	1.22	31.15
Colton, Riverside and San Bernardino	5.29	5.06	6.88	9.58	2.22	29.02

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*Includes foremen and forewomen but not general superintendents.

In the foregoing table significant comparisons are suggested for development. The marking and distributing department is one in which a considerable amount of experience is needed before the worker gains speed and facility. In some establishments men are employed exclusively, and in others a large majority of women are employed, the general tendency, especially in the south, being to employ more women. The following table shows a comparison between the number and per cent of men and women employed, their average weekly earnings, the per cent of women having one year's experience or more, and the labor cost of marking and distributing, by cities:

TABLE XV.

Number and Per Cent of Men and Women Markers and Distributers in the Laundry Industry, by Cities, Average Weekly Earnings, Per Cent of Women Having One Year's Experience or More and Labor Cost of Marking and Distributing.*

City	Number men employed	Number women employed	Total number persons employed	Per cent of men employed	Average weekly earnings of men	Per cent of women employed	Per cent of women having one year's experience or more	Average weekly earnings of women	Labor cost of marking and distributing (per cent)*
San Francisco	259	73	332	78.0	$17 25	22.0	98.6	$13 37	9.69
Los Angeles	199	274	473	42.1	13 94	57.9	58.7	8 92	8.56
Oakland	79	48	127	62.2	17 03	37.8	91.7	10 63	8.23
Fresno, Stockton, San Jose	43	7	50	86.0	20 43	14.0	71.4	11 13	8.06
Pasadena	36	11	47	76.6	13 81	23.4	90.9	10 76	7.78
Colton, Riverside, San Bernardino	6	13	19	68.4	17 02	31.6	92.3	8 81	5.29

*Figures for labor cost taken from incomplete returns; see Table XII.

Los Angeles shows the highest percentage of women employed, 57.9 per cent, of whom 58.7 per cent have had one year's experience or more and 41.3 per cent have had less than one year's experience. Women's earnings in San Francisco average 57 per cent higher than in Los Angeles, and men's earnings in San Francisco 23 per cent higher than in Los Angeles. The cost of this department in San Francisco (9.69 per cent) is only 14 per cent higher than in Los Angeles. The significance of this comparison seems to indicate the value of system and experience. The establishments which have employed both men and women almost unanimously report that with equal experience a woman will do neater, more accurate, and an equal amount of work. Many of the men in this department have had many years' experience. While no information was gathered concerning the length of experience of the women who are classed in general as having had one year's experience or more, it is presumptive that the average length of experience of the women will be much less than that of the men, particularly in the establishments which have been changing from men to women.

Labor cost in the wash room varies considerably in the different cities, not always directly with the average weekly earnings of the men, as shown in the following comparison:

TABLE XVI.

Average Weekly Earnings and Labor Cost of Wash Room, by Cities.

City	Average weekly earnings	Labor cost
San Francisco	$18 02	5 12
Los Angeles	13 41	3 50
Oakland	15 79	6 47
Fresno, Stockton, San Jose	17 42	6 18
Pasadena	12 83	3 87
Colton, Riverside, San Bernardino	14 07	5 06

Labor cost and earnings are lowest in Los Angeles and Pasadena. Earnings are highest in San Francisco, but labor cost is lower than in Oakland, Fresno, Stockton and San Jose. This is probably due largely to the fact that the washers in San Francisco averaged full time, indicating that the plants were operating on a full week schedule, and in the other cities the men averaged less than full time.

The flat-work department is the one containing the most inexperienced and lowest paid workers. A comparison between the per cent of experience, average weekly earnings and labor cost is illuminating. In the following table a slight allowance must be made for the fact that the proportion of flat work is less in San Francisco than in the other cities. The difference in amount of flat work is not the difference in amounts listed as flat work in Table XII, but the difference between the amount of flat work plus the proportion of flat work contained in the bundle work and wet wash and rough dry, a proportion which varies with individual laundries over a wide range. Estimating one-third of the bundle work to consist of flat work and charging the total earnings in the flat-work department against a proportionately reduced amount, the labor cost of flat-work ironing in San Francisco, as compared with Los Angeles, would show 8.01 in place of 7.41. This would indicate a higher labor cost in San Francisco amounting to 8.3 per cent against higher average earnings of women of 20.8 per cent, and higher average earnings of men of 35.1 per cent. The per cent of women in Los Angeles having had one year's experience or more is 53.7, and in San Francisco, 95.6. The proportion of men employed is about equal. The comparison indicates the value of experience (notably less than in the marking and distributing department), and of maintaining the labor force free from the disorganizing effects of frequent change of help:

TABLE XVII.

Number and Per Cent of Men and Women in the Flat-work Ironing Department in the Laundry Industry, by Cities, Average Weekly Earnings, Per Cent of Women Having One Year's Experience or More, and Labor Cost of Flat-work Ironing.*

City	Number men employed	Number women employed	Total number persons employed	Per cent of men employed	Average weekly earnings of men	Per cent of women employed	Per cent of women having one year's experience or more	Average weekly earnings of women	Labor cost of flat-work ironing (per cent)*
San Francisco	105	548	653	16.2	$10 71	83.8	95.6	$8 28	7.41
Los Angeles	113	707	820	13.8	7 91	86.2	53.7	6 83	7.38
Oakland	8	240	248	3.2	7 39	96.8	87.0	7 11	7.63
Fresno, Stockton, San Jose	-------	118	118	-------	-------	100.0	69.5	8 14	8.84
Pasadena	12	71	83	14.5	8 42	85.5	71.8	7 45	7.11
Colton, Riverside, San Bernardino	-------	56	56	-------	-------	100.0	60.7	5 82	6.88

*Figures for labor cost taken from incomplete returns; see Table XII.

In the finishing department less variation in labor cost is shown. San Francisco shows labor cost 8 per cent higher than Los Angeles, but with the larger proportion of bundle work this difference should be reduced. A comparison of the earnings of men and women in the ten separate occupations involved would be very elaborate, but it is sufficient to indicate that in San Francisco the earnings of women vary from 14 per cent to 34 per cent higher than in the same occupations in Los Angeles. In point of experience San Francisco has a higher percentage of experienced workers in every occupation except the shirt press, an occupation in which both cities show 100 per cent experienced workers. The lowest per cent of experienced workers in any of the occupations in San Francisco is in the cuff, yoke and neckband presses, in which occupation 91.8 per cent have had one year's experience or more, against 61.7 per cent experienced workers in Los Angeles in the same occupation, and the same general ratio is preserved.

The comparative figures for superintendence are not subject to analysis. In some laundries working foremen and forewomen are classed in the pay roll data as "foremen" or "forewomen," and in other establishments they are classed among the workers in the department.

APPRENTICESHIP.

Records of individual workers who had been employed less than a year and a half were secured from a considerable number of laundries for the purpose of obtaining information concerning the advancement in wages—presumably also in proficiency—with experience. The results obtained from these records were inconclusive as to the necessary length of time required to become a proficient worker.

In San Francisco the rates of wages in all the American power laundries are governed by the union scale. In the shaking room the apprenticeship period is two weeks only, at a rate of $7.00 per week. In Los Angeles of the 21 establishments investigated 18 had mangle crews. Of the 18 having mangle crews two paid the women on the piece-rate system and two on the bonus system. In these four plants a relation existed between efficiency and wages, but, as the earnings are figured on the work of the entire crew and divided by the number of workers, the record of an individual worker is not dependable. A comparative beginner put on a good crew will share equally in the crew's earnings, and the same worker put on a poor crew will show much lower wages. Of the 14 plants paying on a time basis in eight plants employing a large majority of all the mangle workers a standard wage was paid on the shaking table and on the flat-work ironer, the beginner receiving the same rate of pay as the woman with years of experience, no period for learning being recognized. In the remaining six laundries a range of from 50 cents to $2.00 a week existed, but a line drawn at one year's experience showed some women with less than this much experience receiving the highest rate. and some women with a year's experience receiving the lowest rate.

The single rate of pay for shakers and for flat-work ironers prevails in the other cities.

It is customary for the worker in a laundry to start on the shaking table, and advancement is made to the flat-work ironing and thence to the dry house, dampening, collar department and the lighter press machines. The records of advancement showed not the increase in proficiency, as indicated by increase in wages, in the beginning occupation, but rather the length of time required in the various establishments for a woman to secure a chance at one of the better-paying occupations. This period varied with the establishments. In a laundry in which flat work constituted the bulk of the business, a woman would have little opportunity of obtaining the better paid work, while in a laundry doing a large percentage of bundle work, her chance would be much greater.

Flat-work ironing is often spoken of as a beginning occupation and the lower wages in the light of apprenticeship wages to be received while the worker gains general familiarity with laundry conditions, acquires the habit of regular work and strengthens the muscles for the physical demands of laundry work. The extent to which this department serves as an apprentice department varies with the individual establishment, but for the state as a whole shakers and flat-work ironers constitute 39.2 per cent of all women in the industry; and 60.8 per cent of the shakers and 76.8 per cent of the mangle girls have been in the industry over one year. The occupation consequently must be considered as one in which the majority of the women will remain regularly.

In the marking and distributing department the union agreement in San Francisco calls for an apprenticeship of eighteen months. For the first three months the rate of wages is $9.00; for the following six months, $12.00; and for the next nine months, $15.00, with journeymen's wages at $18.00. In Los Angeles, where a majority of all the women markers and distributers were found, there are no standards of wages. A large number of the women have had less than one year's experience and rates are low. The comparison of wages, experience and labor cost (see Table XV) indicates the value of experience in this department. In the other cities the percentage of women in this department is small and standards of advancement irregular.

In the finishing department the union agreement in San Francisco calls for full journeyman's wages after the operator of any machine has worked six days, this period being lengthened in union agreements in some other cities to three weeks. The small press machines, collar machines and starch room are the positions where the operator is started in the finishing department. In actual practice the operator on any machine in the shirt department must keep up with "the line." Work is passed from one operator to the next and a worker who can not keep up will retard the whole line. In a laundry having more than one "line," adjustment can sometimes be made so that an experienced operator on the same machine takes part of the work of the beginner, but this causes confusion. When the new girl is put onto a machine the forewoman or foreman usually stands by and helps, and by an unusual expenditure of effort the new worker is able to keep up with the progress of the line.

Apprenticeship for hand ironers is recognized in the San Francisco union agreement at one year. For the first six months the rate is $9.50; for the second six months, $10.50, and after one year, $11.50. Aside from the union agreements advancement of hand ironers is irregular and unstandardized.

REPORT ON CANNING INDUSTRY

INTRODUCTION.

The Industrial Welfare Commission intended to submit with this report a complete resume not only of its investigations in the canning industry but of the effect of its orders made February 14, 1916. Because of the delay of the canners in submitting to a commission a very voluminous and necessary record of the women's hours and earnings by product, it was impossible to get this material tabulated and analyzed in time to present with this report. It is impossible without this information at hand to give in exact figures the effect of the commission's orders, either in wages, hours or sanitary conditions. We therefore submit a brief report of the investigations which preceded the deliberations of the wage board and final determinations in this industry.

The canning industry of California is one of the largest industries in the state, its output for 1916 being approximately $25,000,000.00. During the brief season that the canneries are in operation they employ more women than any other industry in California, about 22,000 women having been employed in the canneries in 1916.

In February and March, 1914, the first conferences were held with representatives of the canning industry in Los Angeles and San Francisco. After full discussions of the difficulties of obtaining information concerning either wages or hours, it was determined that the industry should keep a careful record of hours and earnings of the women in each cannery during the season of 1914. The form of such record was outlined by the secretary of the commission. This record, when tabulated, revealed the exceedingly difficult problem of regulating hours, as the piece rate system generally used permitted of the greatest irregularity of attendance, some women working thirty hours or less per week and others as high as 84 hours per week. This tabulation, with other information gathered by special agents investigating in 1915, will be submitted with the complete canning bulletin to be published soon.

During the first week in August, 1915, Commissioner Edson called a meeting of the canners of southern California, to be held in the Los Angeles office of the commission. A full and free discussion of the question of minimum rates of pay and hours of labor was had. It was brought out fully that on account of fewer products being canned during the height of the season, southern California canners could get along with less hours of labor per day than in other parts of the state. In the central part of California pears, cling and free peaches and plums come in at the same time, and as all are extensively canned this generally causes a glut for a short season, at which both the mechanical equipment and labor supply are taxed to their utmost.

On August 13, 1915, the advisory committee of canners, consisting of R. I. Bentley, E. E. Chase, R. M. Barthold, Andrew G. Griffin, G. E. Grier and E. H. Kennedy, met at San Francisco. The same committee reported on tentative standards in wage rates on October 1, 1915, as follows:

	No. 1 fruit	No. 2 fruit
Peaches, clings	$.20 per 100 lbs.	$.25 per 100 lbs.
Peaches, frees	.10 per 100 lbs.	.125 per 100 lbs.
Apricots	.20 per 100 lbs.	.25 per 100 lbs.
Pears	.325 per 100 lbs.	.40 per 100 lbs.
Cherries	.25 per 100 lbs.	.25 per 100 lbs.
Tomatoes	.03 per 12 qts.	

For filling or packing fruit in cans, as follows:

No. 2½ cans	$.01½ per doz.
No. 10 cans	.036 per doz.

In the fall of 1915 the commission was most fortunate in securing the services of Miss Marie L. Obenauer, formerly chief of the woman's division of the United States Department of Labor. Miss Obenauer made a study of the material collected by the agents of the commission during the summer. This study, together with probably the first study of the production per woman per hour, was made directly from the working piecework checks of the women in the several canneries. Miss Obenauer's report follows in full:

WORKING CONDITIONS IN CALIFORNIA CANNERIES.

By MISS MARIE L. OBENAUER

[Analysis of data collected by the Commission in 1915, preparatory to the calling of a wages board to establish wage and working standards in the canning industry.]

THE PROBLEMS OF SANITATION AND HYGIENE.

Putting up fruit and vegetables in the modern cannery presents at the outset serious problems of sanitation which did not attend the work in the home only because of the enormous differences in the volume of material handled. The modern canner has the same raw material to deal with as the housewife—perishable fruits and vegetables, sugar, and hot and cold water—but he gathers his ingredients in millions of quarts or pounds while the housewife assembles her winter's supply in dozens of quart- or two-quart cans. It is plain, therefore, that the canner who attempts to use kitchen methods or equipment to do a modern cannery business will be confronted with a problem in sanitation which quickly becomes a concern to the consuming public as well as to the workers, for while the housewife could safely let the refuse remain an hour or two till she finished her small lot, such a method will not work in a cannery. If there is nothing to prevent fruit, fruit juice, skins, seeds and water from falling to the floor, or if they are not removed quickly, the floor, if wooden, will soon get sour and ''smelly'' and then rotten, becoming a serious menace to health. As most of the women in the modern California cannery are paid on a piece rate basis they can not afford to take the time to clear away refuse and keep the floor dry. Provision must be made for this if there is to be reasonable sanitation.

It is well enough for the housewife to prepare fruit and vegetables near the place where the cooking or scalding of the product is done, for at most there are but two or three comparatively small kettles emitting steam at one time, but the same arrangement in a modern cannery, without devices to draw off the steam and excessive heat create enervating atmosphere which materially affects the health and efficiency of the workers. The housewife does not need to provide especial washing facilities for herself, when she is putting up her fruit. All other considerations aside, her personal interest in the product will impel her to make adequate use of such as she has, no matter how inconveniently located. The modern canner, however, is not justified in failing to provide adequate washing facilities within convenient reach of the workers, for the women pieceworkers can not afford to lose time going a distance to find, or waiting for a chance to use, a basin. Cleanliness and health require the use of washing facilities during the course of a day's work with food products. Cut fingers, accidental contact with dirty objects, and, especially, visits to the toilets call for a liberal use of the washbasin. If, however, there is an inadequate number of basins it is obvious that personal cleanliness and comfort will suffer seriously.

It is not necessary for the commission to do more than call the Wages Board's attention to the fact that grave considerations of health demand that the toilet accommodations be adequate, accessible and cleanly.

Finally, a woman canning in the home kitchen may work her way through a supply of fruit, doing all her own "fetching and carrying" and she may get through, too, without excessive fatigue. But the cannery manager who expects his women workers to get supplies of fruit and carry away the finished product will work injustice to them as well as to himself. Being paid by "the piece" the time spent otherwise than in canning occupations proper, *i. e.*, cutting, peeling, packing, etc., is unproductive labor for the women and unproductive time for the employer's equipment, to say nothing of the increased risk of having fruit spoil before it can be put up. In other words—using a woman's energy to supply a deficit in equipment or management, may not have serious consequences in the home kitchen, because, the woman herself can regulate the supply of fruit, limiting it to her strength and time. But the method works injustice if applied in a modern cannery, especially where women are paid on a piece rate basis.

Fortunately, there are not many canneries in California at present where the managers are attempting to use kitchen methods and equipment. The Wages Board will see here and there in the following summaries of sanitary conditions, evidences that certain establishments have not measured up to the requirements of the modern cannery.

The summaries, which are based upon the [1]reports of the commission's agents, have been so arranged as to permit the Wages Board to get a bird's-eye view of the sanitary and hygienic conditions in the canneries, as they are revealed in the floors and in the washing and toilet accommodations.

Before discussing these summaries in detail attention should be called to the fact that the problems of sanitation are more serious in some respects in the city canneries than in the country establishments.

The season is short, comparatively, in the country canneries, lasting but a few weeks, because the products packed are usually confined to those grown in the immediate vicinity and are rarely more than two or three in number. This means, of course, that the floors are not wet for so long in the year, have more time to dry out and if reasonable care is exercised odors have plenty of time to fade away. None of these desirable things will happen, however, if the floors are not thoroughly cleaned, the building aired, or if refuse is left about the grounds.

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[1] The commission's investigation was conducted along two lines. One was concerned with the pay roll data alone, and the other with the working conditions in the canneries. The agents of the commission spent a day at least, either as workers or as official representatives, in about forty establishments. Information bearing upon equipment which affects the health and efficiency of the workers was not extensive enough to warrant deductions at the time this analysis was made. Data as to the adequacy of seats, tables, conveyors, etc., are in course of collection for discussion later.

The city canneries, on the other hand, put up all sorts of products which are shipped from all parts of the state. Consequently the establishments are open for the major part of the year, and there is no shut down long enough to make up for any deficit in sanitation which faulty equipment or management may have created from day to-day. Furthermore, some fruit and vegetable products are more "messy" to handle than others. Tomatoes, for example, will turn a cannery sloppy and sour much sooner than apples, apricots or peaches. But when one cannery has them all, or at least all that ripen in the same season, the resulting medley is difficult to combat. It should be understood that the term "city cannery" as used here is applied to establishments having such transportation facilities as to enable them to pack fruit which is shipped in from other parts of the state.

But it is worth while to take into consideration the fact that, although 51 of the 62 canneries covered in the commission's investigation packed peaches, only 30 put up pears and 27 put up tomatoes.

In the summaries that follow there have been inserted the principal products packed by the canneries whose sanitary and hygienic conditions have been reported. It should not be understood that the products named are necessarily the only ones put up by the cannery. It only means that the products named are the principal output of the establishment in question.

The revelation made by the following summaries which should occupy the attention of the Wages Board first, is the fact that 12, or over one-fourth of the 41 canneries visited, are reported by the commission's agents as having floors in poor condition ranging down to "old and filthy" and "worst possible." Six additional establishments are reported as having floors fair or less than good.

On the other hand, the board should find ample encouragement in its work of determining fair standards in the fact, also shown by these summaries, that 23, or over half of the 41 cannery floors, are reported as being in good condition and repair, ranging to "excellent." If more than half of the establishments can maintain good to excellent sanitation in the matter of floor condition, there should be no good reason why the others can not do the same.

Floor Construction and Condition.

[1]Cannery No.	Products—principal	Floor material	Condition and repair	Provisions for removing refuse	Protection against dampness
63	Peaches, apricots and pears	Wood	Old and filthy	Refuse left on floors; sawdust scattered about for protection	A few trays; no racks.
54	Apricots, peaches, pears, tomatoes*, etc.	Wood	Fair	Men cleaners	Racks.
53	Apricots, peaches, pears, tomatoes*, etc.	Wood	In repair, but poor condition	Men cleaners, holes in floor into which refuse is thrown	Platforms (floors wet).
29	Apricots, peaches, pears, tomatoes, etc.	Wood	Poor	Men cleaners (not thorough)	Platforms.
21	Apricots, peaches, pears, etc.	Wood	Good	Men cleaners	Platforms.
34	Apricots, peaches, pears, tomatoes*, etc.	Concrete	Good	Men cleaners (well swept)	Platforms.
42	Pears, peaches, apricots, tomatoes	Wood	Good	Men cleaners	Racks (canners).
38	Peaches, tomatoes, pears, apricots	Wood	Good	Men cleaners (well swept)	No racks.
11	Peaches, tomatoes, pears, apricots	Mastic over wood	Good	Men cleaners	Racks (canners).
58	Pears, peaches, apricots	Concrete	Good	Men cleaners	Raised platforms.
55	Apricots, peaches, pears, tomatoes*	Wood	Fairly good	Men cleaners	Raised platforms.
39	Apricots, peaches, pears, tomatoes, etc.	Concrete	Very good	Men cleaners	Platforms.
56	Pears, tomatoes, etc.	Wood	Good	Men cleaners	Platforms.
28	Apricots, peaches	Wood	Fair	Men cleaners	Racks.
52	Apricots, peaches, tomatoes*, etc.	Wood	Badly worn	Men cleaners	Platforms.
19	Peaches, pears	Wood	Old—poor condition	Men cleaners (not thorough)	Racks.
43	Peaches, pears	Wood	Fair	Men cleaners	Racks.
64	Apricots, peaches	Wood	Old, soft, insanitary	Men cleaners	Narrow racks, floor wet (inch high).
10	Peaches	Wood	Poor	Men cleaners	Satisfactory racks.
65	Peaches, etc.	Cement	Good	Men cleaners	No racks; not very wet.
66	Apricots, peaches	Cement	Excellent	Men cleaners	Racks; floors very wet.
40	Apricots, pears, peaches	Wood	Good	Boy cleaners	Racks.
67	Peaches	Wood	Old, rough and insanitary	Men cleaners	Racks.
68	Peaches	Cement	Good	Men cleaners	Racks; poor drainage.
27	Apricots, peaches, pears, tomatoes*, etc.	Wood	Good	Men cleaners	Floor dry (no racks).

61	Tomatoes	Wood	Poor	Men cleaners	Floor dry (no racks).
59	Apricots, peaches, pears, tomatoes*	Cement	Good	Men cleaners	Floor dry (trays used).
36	Apricots, peaches, pears	Wood	Fair	Men cleaners	No racks.
7	Apricots, peaches, pears, tomatoes*	Wood	Good	Men cleaners	No racks; floors dry.
57	Apricots, peaches, pears, tomatoes*	Wood	Fair	Men cleaners	No racks; floors wet.
48	Apricots, peaches, pears, tomatoes*	Double wooden floor	Good	Men cleaners	No racks; floors wet.
14	Apricots, peaches, pears	Cement	Fair	Men cleaners	No racks; floors wet.
13	Apricots. peaches, pears, tomatoes	Canning—wood Cutting—cement	Worst possible repair	No provision	Boards to stand on; floors wet.
62	Tomatoes*	Cement	Good	Men cleaners	Floors dry; racks.
30	Apricots, peaches, tomatoes	Cement	Poor; no drainage	Men cleaners	Racks (not satisfactory; floors wet).
6	Apricots, peaches	Wood	Good	Men cleaners	Platform (floor dry).
3	Apricots, peaches	Cement	Good	Men cleaners	No racks (floor wet).
50	Apricots, peaches, tomatoes*, etc.	Cement	Good	Men cleaners	No racks.
53	Apricots, peaches	Wood (waterproofing over part)	Poor; undrained	Men cleaners	No racks.
60	Apricots, peaches	Cement	Very good	Men cleaners	Racks.
32	Apricots, pears, peaches	Wood	Good	Men cleaners	Racks; floor dry.

*Predominate over others named.

[1] Establishments are numbered to agree with establishment numbers in the statistical tables (elsewhere shown in this discussion) which in turn agree with the identification numbers used in the commission's previous report on hours and earnings of all women and minors engaged in cannery work. Ten of the establishments shown on these sanitation tables did not furnish pay roll records and are therefore indexed with numbers higher than 58, the last number attached to canneries furnishing available records on either hours or earnings or both.

The commission might well submit for the consideration of the Wages Board three exhibits which should be of real assistance in arriving at reasonable standards of floor sanitation in canneries.

1. The sanitary regulations recommended by committee on sanitation of the National Canners Association during its seventh annual convention held in Baltimore, Maryland, in 1914. The paragraph on cannery floors reads:

> "The floors should preferably be tight and pitched to accommodate the machinery—that is, to confine overflow and waste to the smallest area. Gutters should be provided to carry all waste to the sewers. Grating should be provided around cookers, washers, and at other places where overflow is unavoidable. In case a slatted floor is used over a cement or other tight subfloor, a space of not less than four inches shall intervene in order to permit proper washing with hose. Slat or open floors shall not be permitted in factories over water, unless the movement of the stream or tidewater is sufficient to carry off all waste and not permit the same to become putrid or unless the slat or upper floor is removable for cleaning."

2. Bulletin No. 1 issued from the Research Laboratory, National Canners Association, under the direction of A. W. Bitting. Concerning floors, Mr. Bitting says:

> "Slippery floors are responsible for a fair share of accidents varying from hard bruises to fractures of the wrist, arm and leg. The slippery floor is one of the conditions which should be abolished. At one time it was thought to be unavoidable, owing to the water used in preparation, to overflow from syruping and filling machines, etc. A brining, syruping, or filling machine which has no provision to receive and retain the overflow or the contents of a battered or overturned can, is no longer a necessity and does not fill one of the requirements of proper sanitation. There are decidedly better and cleaner methods of distributing the products to the tables and removing the filled cans, than by the truck and tray system, so there is little need of water, juice, and pieces of fruits and vegetables upon the floor. The best preventive of accidents from slipping is a dry floor, and this is attainable with care and proper equipment. Open gutters should not be permitted; instead flush irons or wood gratings should be provided. Wherever overflow is unavoidable, as in front of boiling kettles, blanchers, etc., slat gratings should be provided. It is not possible to avoid all water, overflow, or bits of fruits and vegetables on the floor, but there can be a great reduction in the amount in most plants.
>
> "Nearly all factory owners realize that the present floors lack a great deal of being ideal. Cement is the best from many standpoints, but is so hard and unyielding that it is extremely tiresome on the feet. A great deal of this foot and leg weariness may be

> overcome by the use of rubber heels for those who walk a great deal and the use of spring boards for those who are obliged to stand in one place.''

3. The sanitary regulations affecting floors in food factories located in California cities where the fruit canneries are operating:—

(*a*) San Francisco: All floors of buildings used as fish markets, bakery shops, sausage factories, candy factories and other places where foodstuffs are prepared for sale, hereafter established, shall be constructed of concrete or other fireproof material covered with a wearing surface of cement or asphaltum and carried up on all walls at least eight inches; or, if of wooden construction, such floor shall be covered with waterproof material, the same to run up on the walls at least eight inches in height. Over this waterproof material shall be placed a wearing surface of concrete not less than two inches in thickness troweled to a smooth surface, or of mastic not less than one inch in thickness. Said wearing surface shall be carried up on walls to the top of the before-mentioned waterproof material.

(*b*) Oakland: No specific regulations.

(*c*) Berkeley: The floors, sidewalls, ceilings, furniture, receptacles, utensils, implements and machinery of every establishment or place where food is manufactured, packed, stored, sold or distributed, shall at no time be kept in an unclean, unhealthful or insanitary condition; and for the purposes of this act, unclean, unhealthful and insanitary conditions shall be deemed to exist if food in the process of manufacture, preparation, packing, storing, sale or distribution is not securely protected from flies, dust, dirt, insanitary conditions, and as far as may be necessary, by all reasonable means from all other foreign or injurious contamination; and if the refuse, dirt, and the waste products subject to decomposition and fermentation incident to the manufacture, preparation, packing, storing, selling and distributing of food, are not removed daily; and if all trucks, trays, boxes, baskets, buckets, and other receptacles, chutes, platforms, racks, tables, shelves, and all knives, saws, cleavers, and all other utensils, receptacles, and machinery, used in moving, handling, cutting, chopping, mixing, canning, and all other processes used in the preparation of food, are not thoroughly cleaned daily; and if the clothing of operatives, employees, clerks, and other persons therein employed, is unclean, or if they dress or undress, or leave or store their clothing therein.

There are no specific regulations in other towns wherein canneries are operated.

TOILET AND WASHING FACILITIES.

Arranging the summaries of toilet and washing facilities in the same order as the summaries on floor conditions were arranged, it becomes apparent at once that the toilet facilities are in some instances wholly inadequate in number. The summaries show that in two cases there is but one toilet to about seventy women. Inasmuch as Los Angeles, Sacramento, San Jose, Pasadena, Pomona, Fresno and Stockton, have a number of canneries listed in the following summaries it will be helpful to the Wages Board to consult the existing health regulations covering toilet accommodations in factories in these cities. A brief perusal will reveal to what extent such regulations would, if properly enforced, correct the defects.

The existing health regulations on the subject are:

San Francisco—

> "In all places of employment where men and women are employed, separate and sufficient water-closets shall be provided for males and females, as required by these rules and regulations.
>
> "The water-closets provided for males shall be plainly marked 'Men's Toilet,' and the water-closets provided for women shall be plainly marked 'Women's Toilet.'
>
> "In all places of employment * * * not less than one water-closet shall be provided for every twenty-five males or lesser number, and not less than one water-closet shall be provided for every twenty-five females or a lesser number; and these water-closet facilities shall be provided upon at least every second story; and where there are employees in a basement, such basement shall be considered as being one story."

"Each and every compartment wherein a bath, water-closet, urinal or slop or scullery sink is situated, shall be ventilated by means of a Window opening directly to the external atmosphere, or by means of an air shaft having an area of at least two square feet. This air shaft shall continue of undiminished size to the roof, and at this point its opening shall equal in area not less than that of the shaft."

Berkeley, Oakland: "It shall be unlawful to prepare, keep for sale, or sell any kind of meat, milk products, fish, game, vegetables, fruit, bread, cakes, candies, or other foods in any room in which a toilet is located or in any room opening directly into a toilet room, unless there is outside ventilation to such toilet room."

Los Angeles—No specific regulations.

San Jose: "In all places of employment, where men and women are employed, separate and sufficient water-closets shall be provided for the males and females, as required by these rules and regulations.

"The water-closets provided for males shall be plainly marked 'Men's Toilet,' and the water-closets provided for women shall all be plainly marked 'Women's Toilet.'"

Sacramento—No specific regulations.

In order further to reduce the risk of establishing standards which might needlessly conflict with existing health regulations, the orders issued by the state health authorities should also be consulted. Finally, the commission could profitably submit for the consideration of the Wage Board, the following recommendations of the Sanitation Committee of the National Canners' Association.

> ''Toilet rooms must be maintained and where different sexes are employed they must be separate for each sex, plainly and distinctly marked, and to be used only by the sex designated.
>
> ''Toilet rooms, including the walls, floors, ceilings and all fixtures must be kept clean and provided with sanitary paper.
>
> ''Toilet rooms must be open to outside light and air and be of sufficient size and equipment for the number of people employed.
>
> ''Where toilet rooms are in the factory, they must be supplied with proper flushing appliance and connected with a sewer.
>
> ''Outside closets must be sufficiently removed from the factory to avoid being a nuisance and built tight above the ground. The doors constructed to remain closed and the building properly ventilated, lighted and screened. The vault to be kept thoroughly disinfected and cleaned when filled to a level with the ground.''

The board will not fail to observe that what is true about floor conditions is true, though not to so great an extent, concerning the toilet conditions, viz: the majority of the establishments have clean toilets, a large proportion also have an adequate number.

Toilet and Washing Facilities.

Cannery No.	Toilet facilities				Washing facilities						
	Number of women	Number of toilets	Construction and condition	Equipment (conspicuous features)	Number of basins	Type	Condition	Location of washing facilities	Ventilation and light in wash room	Accessories for washing	Drinking facilities
63	222	6	Flush; 5 working; dirty.	Partitions; newspaper for toilet purposes.	2	White sinks	Poor	In 2 small rooms	Poor; dk. passage.	Paper towels; soap.	5 tin cans; 1 drinking glass.
54	265	10	Ind. and patent flush; clean.	Partitions; no doors	1	Large sink	Fair	In med. size rm.	Adequate	Towels; soap.	1 fountain.
53	510	16	Self-flushing; cln.; working.	No doors	6 1	Stationary and long sink.	Good	In large room	Good	Paper towels; liquid soap.	2 large drinking fountains.
21	342	8	Pat.; ind. flush; clean; working.	No doors	12	Large metal sinks.	Good	In small room	Good	Paper towels	1 drinking fountain.
29	388	6	Pat.; ind. flush; clean; working.	1 door; newspaper for toilet purposes.	2 1	White enml. and tin sink.	Good	In main room	Good	Roller towels; liquid soap.	2 drinking fountains.
34	276	5	Pat. ind. flush; clean; working.	1 door (locked)	4	Enamel	Good	In hallway	Good	Roller towels	1 drinking fountain.
42	226	6	Wooden; flushed autom., clean; working.	No partition; insuff. paper; no doors.	3	Sinks	Good	In main room	Good	Paper towels; liquid soap.	2 sanitary drinking fountains.
38	-----	6	Pat.; ind. flush; fair.	Partitions; no doors; crowded.	2	Galvanized iron sinks.	Fair	On porch	Good	Paper towels; liquid soap.	2 drinking fountains.
11	300	11	--------	--------		Long sinks	--------	In main room	Good	Paper towels; liquid soap.	2 drinking fountains.
58	209	9	Patent; 3 out of order.	No doors; partitions	12	Stationary wash stands.	--------	In main room	Good	Soap; roller towels.	
55	275	4	2; fair²	Partitions; no doors; crude; inadequate.	1 1	Sink and tap.	Fair	Tiny; dark hlwy.	Poor	Liquid soap; roller towels.	
39	404	20	Ind; flush; good	Doors; partitions	12	Enamel	Good	In large room	Good	Linen towels; soap.	2 drinking fountains.
56	-----	10	Ind. flush; old, but clean; bad odor.	Doors and partitions; 7 lighted, 3 dark.	2	Iron sinks	Fair	In fair sized rm.	Fair	Inad. supply towels; liq. soap.	2 drinking fountains.
27	100	6	Flush; clean	Doors; partitions	16	Stationary enml.	Good	In 12 x 15 room	Good	Roller towels; liquid soap.	5 drinking fountains.
61	240	6	Flush; poor	No paper; partitions	6	1 long sink and 6 faucets.	Poor	Outside	--------	Soap; towel racks.	1 drinking fountain.
59	260	7	Flush; good	--------	3	Sinks	Good	In 8 x 12 room	Good	Paper towels; liquid soap.	Bubble fountain.

36	303	15	Flush³		12	Long enml. sinks and 12 faucets.	Fair	In 18 x 25 room	Good	Paper towels; liquid soap.	
73	300	5	Flush; good order	No doors	4	Individ. basins	Fair	In large room	Good	Paper towels; liquid soap.	Common drinking cups.
57	432	15	Ind. pat. flush; clean.		10	Long wooden troughs; 10 faucets.	Good	In small, narrow room.	Fair	Towel and soap racks, but usually empty.	Bubble fountain.
48	400	9	Pat. flush; clean	Doors for 4		Long sinks	Poor	In small room	Fair	Paper towels; liquid soap.	2 drinking fountains.
14	30	2	Flush; good order		6	6 faucets in 6 sinks.	Good	In 15 x 20 room	Very good	Paper towels; liquid soap.	No fountain; women keep cups.
13	150	*3	Flush; dirty; wkg.		1 3	Enml. wash basin; dirty, and wooden trghs. with 3 faucets.	Very dirty	Outside		No soap; no towels.	None.
62	40	1	Flush; good		2	Sinks	Good	Outside		Paper towels; liquid soap.	Drinking fountain.
28	180	10	Flush; good		24	Wooden trghs.	Good	In 12 x 20 room	Adequate	No soap; no towels.	3 sanitary drinking fountains.
52	300	4	Auto. flush; good	No doors	1	Small sink	Poor	In small room	Dark and hot.	1 soiled towel; no soap.	3 drinking fountains.
19	150	2	Flush; working		1	Enamel bowl	Poor	In small room	Poor	No towels	2 drinking fountains.
10	300	8	7 working; flush; clean.		4	Individ. basins	Fair	In 8 x 12 room	Good	Paper towels; soap.	1 sanitary fountain.
64	130	12	Steady flow water through iron trough; clean.		6	Large sinks and 6 faucets.	Fair	In 10 x 20 room	Good	Paper towels; soap.	1 sanitary fountain.
43	275	5	Old trough; slow flow of water.	No door; scant partitions; inad. paper.	1	Long sink for men and wom.	Fair	Outside	Good	Paper towels; soap.	1 drinking fountain.
65	175	6	Trough; flowing water; clean.		1	Large sink	Good	In small room	Good	No towels; no soap.	Enamel drinking fountains.
66	200	8	Flush; dirty; bad odor.		1	Ordinary sink	Fair	In 10 x 12 room	Good	No towels; no soap.	Cans to drink from.
40	300	9	Flush; clean		12	Enamel	Excellent	In 12 x 18 room	Excellent	Liq. soap; 4 large roller towels.	4 drinking fountains.
67	180	5	Flush; old; bad odor.		1	Sink	Poor	In very small rm.	Poor	No towels; no soap.	No fountains.

Toilet and Washing Facilities—Continued.

Cannery No.	Toilet facilities				Washing facilities						Drinking facilities
	[1]Number of women	Number of toilets	Construction and condition	Equipment (conspicuous features)	Number of basins	Type	Condition	Location of washing facilities	Ventilation and light in wash room	Accessories for washing	
68	150	10	Flush; clean	No doors	1	Large sink; 6 faucets.	Clean	In large room	Good	Paper towels; liquid soap.	Drinking fountains.
30	140	3	Flush; not clean		3	Enamel	Fair	In 10 x 10 room	Close; steam from below.	Dirty roller towels; no soap.	1 bubble fountain.
6	160	4	Flush; clean	No doors	6	Individual	Good	In 8 x 12 room	Good	Clean towels; liquid soap.	Sanitary drinking fountains.
3	170	4	Flush; all out of order.	No partitions; no paper.	1 5	Large sink and hand basins.	Good	In 15 x 18 room	Good	Cake soap; 4 roll. towels, dirty.	1 drinking fountain; crude.
50	300	7	Flush; poor	No doors	5	Individ. basins	Fair	In 6 x 15 room	Fair	Soap but no towels.	Drinking fountain.
53	180	5	Flush; clean; good order.		6	Large sinks; 6 faucets.	Good	In 30 x 40 room	Good	Few towels; no soap.	2 sanitary drinking fountains.
60	180	8	Flush; clean		2	Large sinks; 12 faucets.	Excellent	In 12 x 15 room	Good	Paper towels; liquid soap.	2 enamel drinking fountains.
32	180	5	Flush; 4 working		1	Long trough; 1 faucet.	Fair	In 10 x 18 room	Poor; dk.	Roller towels; no soap.	Sanitary drinking fountains.

*Locked.

[1] The numbers here shown are as reported by employers for maximum week.

[2] Construction not reported.

[3] Condition not reported.

The data secured by the commission concerning the washing facilities and summarized in the foregoing tables require the careful attention of the Wage Board.

Where the chief business of the worker is to handle food products, there should be no ''skimping'' on the cleansing accommodations. This requirement, of course, has a broader basis than the health and comfort of the workers and for that reason the Wage Board and the commission can look for an especially active cooperation from the state and city health authorities as well as from the canners and employees themselves.

Measured by the recommendations and regulations which are quoted above, the washing facilities in California canneries are on the whole inadequate at least in number, though there are, of course, conspicuous exceptions.

The sanitation committee of the National Canners Association makes the following statement on the subject:

> ''Wash rooms must be provided, conveniently located and of sufficient size and equipment for the accommodation of all employees and separated for the sexes, equipped with running water and provided with individual or sanitary towels and plenty of soap.''

The foregoing summaries will also reveal to the Wage Board the extent to which drinking facilities are provided for the workers. There is no question but that some provisions in this respect are sharply inadequate. The standards raised by the sanitation committee of the National Canners Association in regard to this are:

> ''Sanitary drinking fountains shall be conveniently placed for employees and common drinking cups be prohibited.''

Other provisions recommended by this committee for the health and comfort of women employees are:[2]

> ''Stools or chairs shall be provided for employees at all work which will permit of sitting.
>
> ''Where a change of clothes for work is necessary, dressing rooms must be provided and hangers and lockers provided for street clothes.
>
> ''A rest room furnished with chairs and couch must be provided in all factories where females are employed.''[3]

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[2] Information bearing upon the equipment which affects the health and efficiency of the Women at work in California canneries was not extensive enough to warrant conclusions as to prevailing conditions at the time the foregoing analysis was made. Data as to the adequacy of seats, tables, conveyors, etc., were, however, in the course of collection for discussion later.

[3] Quoted from "The Sanitary Regulations Recommended by the National Canners' Association During Its Seventh Annual Convention held in Baltimore, Maryland, in 1914."

THE KERNEL OF THE WAGE QUESTION IN THE CALIFORNIA CANNERIES.

The 62 canneries covered by the commission's investigation pack in the neighborhood of 25 varieties of fruits and vegetables. For preparing and packing, different piece rates are paid, not only for the different varieties, but often for the same varieties in different canneries.

The problem of determining fair wage rates is not as complicated, however, as it looks, for while the 62 canneries pack 25 different varieties, yet from three-fourths to four-fifths of the entire canning output for the three years ending January 1, 1915, consisted of peaches, tomatoes, apricots, and [4]pears.

Furthermore, although women are engaged in a variety of cannery occupations, well over four-fifths of them are employed in preparing, *i. e.,* cutting, pitting or peeling the product; or in packing, *i. e.,* putting the prepared fruit or vegetables in the cans. Practically all of these women are paid on a piece rate basis.

Obviously, then, if equitable rates are in effect or can be put into effect for the preparers and packers of these four products, an encouraging stretch of the road to reasonable wage conditions will be covered.

Not only so, but if satisfactory adjustments for the wage difficulties confronting the preparers and packers of the four principal products can be made, they will doubtless furnish safe guides for the solution of the problems involved in putting up the other twenty odd varieties of fruits and vegetables. In short, the rates paid preparers and packers of apricots, pears, peaches and tomatoes, constitute the kernel of the wage question in the California canneries.

THE COMMISSION'S FIGURES ON WAGES.

Some time ago the commission issued a summary of wage data furnished by the canners. The commission desires to impress upon the Wages Board the fact that the figures contained in that report covered the hours and earnings of all women and minors. The report on *adults included forewomen, subforewomen*; and that on minors included *boys under eighteen years of age* who are usually engaged as machine operators and in general labor and are paid on a time rate basis. The figures here submitted to the Wages Board are compiled by the agents of the commission *from the daily time checks or pay roll records* and are confined to *the two occupations* of preparing and packing the four principal products heretofore named. It should be remembered also that they represent the output and earnings of *pieceworkers* only and of *women* only. Necessarily, therefore, they will disagree with the figures for all woman and minor labor previously reported upon by the commission for, all other considerations aside, the inclusion of the hours and earnings of forewomen and male minors would result in a better wage showing than could be made by women alone, especially when no supervisors were included.

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[4] Of the four products peaches are most important, constituting well over a third of the entire pack in 1913 and 1914, and only slightly less than a third in 1912. Tomatoes, constituting about one-fifth, come next in importance, apricots and pears following in the order named.

WHAT THE FIGURES SUBMITTED HEREWITH SHOW.

The purpose of submitting the following figures is to furnish the Wages Board with reliable information covering the producing power of the *normal worker* when engaged in putting up each of the four-named products.

The woman who can do two or three times as much as the normal worker is not a serious problem for she "will make wages" on any rate that is high enough to keep the cannery supplied with labor at all. The women who are necessarily the chief concern on the Wages Board are the great majority whose level of production the cannery must depend on to put up its wares. What this "level of production" is can only be determined by taking the records for so large a number of woman hours that the exception can exert no *undue* influence.

By "production records of woman hours" is meant the total number of hours worked by the women and the total number of pounds or quarts of fruit prepared during those hours.

The method has been to secure as large a number of production records as possible for preparers in apricots, peaches, pears and tomatoes from representative canneries throughout the state and to derive from these records the average production per hour. As the employing canners have recommended a piece rate for preparers of each of the four products, the Wages Board will be readily able to determine what the average hourly earning will be under the recommended rate.

Before going further in this discussion it should be said that limited resources prevented the commission from taking all the available records of this kind in all of the canneries of the state. To meet the limitations in time and money, selections of representative establishments were made, the choice being approved by the commission. [5]Thirteen establishments were chosen representing both city and country canneries and reflecting the prevailing wage standards in every important district of the state. From these canneries the preparing records (*i. e.* cutting, pitting and peeling) for over 115,000 woman hours were secured. Records for more than representative days could not be secured in all of these canneries because of the prevailing method of keeping such records. The number of boxes of apricots and peaches, for example, were always shown separately, but the number of hours worked were usually combined. Available records were confined, therefore, to such checks or entries as dealt with a single product. The obvious defect, resulting from this circumstance, is the undue or inadequate influence which a liberal or limited supply of records from a given establishment might exert. The reader should not overlook the fact, however, that an equal number of records from each cannery, even if available, would not have been a proper apportionment unless the output of the canneries was equal in volume. This, of course, is not the case, so that the only statistically accurate method of selection would have been to select records in proportion to the output. As such information was not available it was necessary to draw conclusions from the material at hand. However, it should not be overlooked that the canneries from which records were taken were regarded both by the commission and a committee of the canners as representative of the establishments throughout the state as to equipment, management and product. Furthermore, the tables summarizing the production and earning figures for over 115,000 women hours will show to what extent the individual cannery records vary from the general average and in what direction. Notwithstanding the statistical defects, therefore, the available material affords a valuable guide to the commission and the Wages Board in measuring the probable yielding power of the piece rates which the canners have recommended.

WHAT PREPARERS PRODUCE PER HOUR; WHAT THEY EARN ON THE PRESENT RATES AND WHAT THEY WOULD EARN UNDER PRESENT CONDITIONS IF THE RATES RECOMMENDED BY THE CANNERS WERE PUT INTO EFFECT.

[6]Apricots.

The records for nearly 45,000 working hours distributed among five selected canneries show an average production of 58.87 pounds per hour among women cutting apricots. The average price paid per hundred pounds was $0.212, netting the cutters an average of 12½ cents an hour. (See Table I.)

The rate recommended by the canners is practically 25 cents a hundred and under present conditions would net the cutters approximately $0.147 an hour. It should be said that this rate of 25 cents a hundred, the canners recommended only for the grade of fruit known as No. 2 fruit, which is smaller, requiring more apricots to the pound, *i. e.* 12 to 16, than the No. 1 grade. The rate recommended for No. 1 fruit was

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[5] Central California Canneries, Visalia, San Jose, San Lorenzo, Sacramento; Bonner Fruit Co., Lankershim; Pasadena Canning Co., Pasadena; Libby, McNeill & Libby, Sunnyvale; Griffin-Skelley, Oakland; Golden State Canning Co., Ontario; California Fruit Canners Association, Oakland, San Francisco; Hunt Bros., Hayward; Pratt-Low Preserving Co., Santa Clara; Golden Gate Packing Co., San Jose; J. H. Flickinger Co., San Jose.

[6] Apricots constitute about 12 per cent of the entire pack of all varieties of fruits and vegetables.

20 cents per hundred. No records were available, however, as to the proportion of each grade packed. The commission has applied in this case as in the case of the other products the higher rate in order that the Wages Board might know what the highest level of earnings would be if the proportion of high and lower grades of fruit continued as they are at present.

WAGE TABLE I.

Production per hour—Apricot Cutters in Selected Canneries of California.

(Figures based on daily records of production for 1914 and 1915.)

(1) Cannery No.*	(2) Hours worked	(3) Days of season represented	(4) Average number boxes cut per hour	(5) Equivalent in pounds	(6) Present standards	(7)	(8)	(9) Present hourly earnings
					Rate per box	Weight of box, pounds	Price per 100 pounds	
11	4,026.5	July 3, 4, 6, 8, 11	1.46	58.4	.10	40	.25	.146
21	3,306	July 15, 17	1.35	60.75	.08	45	.177	.108
59	2,131	July 2, 3, 8, 9, 15	1.28	51.2	.10	40	.25	.128
30	7,567.75	Whole season	1.27	57.15	.10	45	.22	.127
6	16,614.75	Whole season	1.1	47.77	.10	43.42	.23	.11
--	11,144.75		1.48	64	.10	43.42	.23	.148
Total	44,790.75	Averages	1.36	58.87	.096	43.29	.212	.125

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*Establishments are numbered in this and the following tables to agree with the numbers used in the commission's previous report summarizing the hours and earnings as reported by the canners for all women and minors; the minors including both boys and girls.

Pears.

For records covering nearly 9,000 hours of pear peeling, the women showed an average production per hour of nearly 38.4 pounds. The average price paid in the six canneries furnishing these records was $0.371. The earnings resulting therefrom were $0.142.

The rate recommended for peeling No. 1 pears is 40 cents per hundred pounds. If the proportions of No. 1 and No. 2 grades remained unchanged this rate would yield an hourly earning of $0.153 on the same rate of production per hour. (See Table II.)

WAGE TABLE II.

Production per hour—Pear Peelers in Selected Canneries of California.

(Figures based on daily records of production in 1914.)

(1) Cannery No.	(2) Hours worked	(3) Days of season represented	(4) Average number boxes per hour	(5) Equivalent in pounds	(6) Present standards	(7)	(8)	(9) Present hourly earnings
					Rate per box	Weight of box, pounds	Price per 100 pounds	
41	2,962	Sept. 1, 3	1.14	42.18	.15	37	.405	.171
21	1,332.5	Aug. 10, 14	.86	32.7	.15*	45	.333	.129
59	399	July 23, Aug. 18.	1.01	36.36	.15†	36	.413	.1515
56	1,833	Aug. 28, 29, 30, 31, Sept. 3	.97	38.8	.15	40	.375	.1455
7	1,679.5	Aug. 23, 28	.68	32.64	.15	48	.3125	.103
2	569.25	Aug. 8	.75	30.0	.15	40	.375	.1125
Total	8,775.25	Averages	.95	38.38	.15	40.4	.371	.142

*Medium Bartlett pears.
†Five grades.

[7]Tomatoes.

The figures for tomato peeling, which is paid for by the quart rather than by the pound, are based upon nearly sixteen thousand hours, during which time the women peeled an average of 58.13 quarts per hour. They were paid an average of [8]$0.2657 per hundred quarts in the seven canneries from which these records were received. The tomato peelers earned an average of $0.154.

The single rate recommended by the canners is 25 cents a hundred quarts; applied to the production records the earnings per hour would be $0.145.

WAGE TABLE III.

Production per hour—Tomato Peelers in Selected Canneries of California.

(Figures based on daily records of production for 1914 and 1915.)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Cannery No.	Hours worked	Days of season represented	Average number buckets per hour	Equivalent in pounds	Present standards			Present hourly earnings
					Rate per bucket	Quarts per bucket,	Price per 100 quarts	
32	3,779.6	Sept. 6, 7, 8, 10, 11	448	63.76	.04	12	.333	.179
54	802	Oct. 8	5	70	.03	14	.21	.15
41	1,936	----------------------------------	5.01	6.1	.03	12	,25	.15
38	5,354	Sept. 12, 14, 16, 17; Oct. 11, 12, 14, 16	5.07	60.84	.03	12	.25	.1521
53	981	Oct. 13	5.85	70.20	.03	12	.25	.1755
59	850.5	Oct. 7	5.28	63.36	.03	12	.25	.1584
57	2,136	Oct. 29, 30	4.54	45.4	.02½	10	.25	.1120
Total	15,893.1	Averages ----------------------	4.91	58.13	.029	11.84	.2657	.154

[9]Peaches.

On a record of 9,000 hours from four high-grade canneries, the production per hour in cutting cling peaches was shown to be 62.6 pounds per hour. An average price of $0.2416 per hundred pounds was paid for this work, resulting in an average hourly earning of $0.151. (See Table IV.) The canners recommend a rate of 25 cents a hundred for No. 1 grade under which the same production per hour and the same proportion of No. 1 and No. 2 grades of fruit would net the cutters of cling peaches $0.157.

To secure an intelligible record of production for peach cutters was a difficult matter owing to the custom of combining the records of working hours when women were cutting both cling and free peaches. Under such a system it is seldom possible to tell just what the average production per hour for each variety is throughout a season or in a large number of representative days.

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[7] Tomatoes constitute a little over 21 per cent of the entire pack in 1914, 17.95 per cent in 1913, and 21.26 per cent in 1912.

[8] The prevailing rate is 25 cents a hundred quarts, but one cannery paying a rate of $0.333 a hundred and furnishing records of 3,700 hours materially raised the general average price paid in the seven canneries furnishing records.

[9] Peaches of all varieties constituted about a third of the entire canning output for the three years ending January 1, 1915.

As shown on the foregoing table, however, the commission did secure records for 9,000 hours when the women were cutting cling peaches only.

These records were from four canneries regarded as among the best in the state, and therefore can be taken as throwing some light on the producing power of cutters of cling peaches under conditions doubtless better than average. One cannery shows an exceptionally high rate of production. Eliminating this establishment the average for the other three—all considered well equipped and well managed—would have fallen below 60 pounds and the earnings below 14 cents per hour.

It is plain, therefore, that these records for cling peach cutters need further light and the Wages Board is requested to study them in close comparison with the following table:

WAGE TABLE IV.

Production per hour—Cling Peach Cutters in Selected Canneries of California.

(Figures based on all available records of production for exclusively cling peaches in the selected canneries.)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
					Present standards			
Cannery No.	Hours worked	Days of season represented	Average number boxes per hour	Equivalent in pounds	Rate per box	Weight of box, pounds	Price per 100 pounds	Present hourly earnings
41	1,478	Sept. 2, 4	1.43	51.48	.10	36	.278	.143
59	4,017	July 20, 23, 25; Aug. 20	1.69	60.84	.08	36	.22	.135
6	1,243	Weeks ending Aug. 22 and 29	2.15	87.5	.12	40.7	.29	.258
21	2,267	July 23, 30, 31; Aug. 10, 23	1.33	59.85	.10	45	.22	.133
Total	9,005	Averages	1.62	62.61	.10	38.65	.2416	.151

Table V, showing the earnings of women cutting cling and free peaches, is based on over 40,000 hours but is limited to three canneries. There were two reasons for this. In the first place, the custom of combining the hours worked in the two varieties made it necessary to secure records from canneries putting up a considerable proportion of free peaches in order to estimate fairly the effect on the number of boxes per hour which a woman can cut when handling both clings and frees as compared with the number she can cut when working in clings alone. Two of the three canneries furnishing records for free and cling peach cutters packed from a third to a half as many frees as clings. The other establishments put up approximately a fourth as many frees as clings.

In the next place it was advisable to eliminate as far as possible all other variable factors which affect the amount of work which a woman can do in an hour, such as difference in equipment, management, etc., in order to further establish the effect of the free peach cutting. It was, therefore, desirable to get as many hours as possible in the same cannery. Inasmuch, however, as two of the canneries paid rates markedly in excess of that paid in other canneries, and as these rates materially affect the general average on the table because of the large number of records available, the average rate of $0.279 per hundred pounds paid in these three canneries is not fairly representative.

[10]The value of this table lies chiefly in the records of production per hour when women are cutting both free and cling peaches.

During the 40,459 hours the women cut approximately 7,695 pounds per hour, 44 per cent of which were free peaches, and 55 per cent[11] clings.

One glance at the two tables reveals *apparently* a marked influence for better earnings when women are cutting both frees and clings than when they are cutting clings alone. This is only an apparent influence, for as before intimated the price paid both for frees and clings in the canneries furnishing the records summarized in Table V was markedly higher than elsewhere in the state.

In other words, using only the production records and applying thereto the average rate paid for clings in the other canneries and which is substantially the same as the highest rate recommended by the canners' committee (25 cents per 100 pounds), the general average earnings per hour would, on the same rate of production, fall to $0.154 which is substantially the same as that earned on cling peaches as shown in Table IV.

The rate now paid for cutting a hundred pounds of free peaches is slightly less than half of that paid for cutting cling peaches and that recommended by the canners committee is *just* half that for cling peaches. This is on the assumption that women can cut twice as many free peaches in an hour as they can cut of clings. But the records (see Tables IV and V) show that they are not cutting at quite the rate[12] of half as much again per hour.

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[10] That it is not representative is further indicated by the fact that the highest rate recommended by the canners is 25 cents and for frees 12½ cents.

[11] This proportion does not prevail throughout the state, the proportion of frees being much less.

[12] The reason for this will appear in the discussion of cannery equipment.

WAGE TABLE V.

Production per hour—Free and Cling Peach in Selected Canneries of California.

(Figures based on daily records wherein number of boxes of each variety were kept separate and the hours worked were combined.)

(1) Cannery No.	(2) Hours worked	(3) Part of season represented	(4) Average number boxes per hour	(5) Equivalent in pounds	(6) Per cent of	(7)	(8) Amount paid per 100 pounds	(9)	(10) Present hourly earnings
					Frees	Clings	Frees	Clings	
10	996.5	July 16	2.24	89.60	24.77	75.23	.12	.20	.162
6	18,316.0	Weeks ending Aug. 1 and 15; July 18 and 25, 1914	1.85	74.03	48.5	51.5	.15	.29	.168
--	11,531.5	Weeks ending July 24, 31; Aug. 7, 1915	2.23	89.33	34.1	65.9	.15	.29	.2219
30	10,615.5	Weeks ending July 31; Aug. 7, 14	1.60	67.20	50.09	49.9	.143	.286	.143
Total	40,459.5	Averages	1.90	76.95	44.3	55.7	.147	.279	.169

FACTORS WHICH ENTER INTO THIS PRODUCTION PER HOUR AND WHICH MUST BE TAKEN INTO CONSIDERATION IN DETERMINING EQUITABLE RATES.

A situation exists which makes it necessary to compare carefully the average production for all canneries selected for this study with the average production in the individual canneries shown separately on the foregoing tables.

The commission refers to the difference in equipment, working conditions and grades of fruit and vegetables found in the several canneries included in the group from which these records were taken. A cannery which manages, either through improved equipment, or by providing carriers and cleaners, to get the raw material to, and the finished product and waste away from, the cutters without effort or loss of time on their part makes possible a larger production per hour, and a proportionately higher earning power on the same grade of product and same rate, than the cannery which causes the cutters to lose time and energy "fetching and carrying" or in waiting for supplies.

Again, certain districts of the state supply a better grade of product than others. The fruit is larger, requiring fewer units to fill a box of given weight; or there is less spoilage, requiring less handling of the material. The grades of product in a district for a season may be so bad as to more than offset the effect of superior equipment and management and cause the production per hour to fall below that of women working in canneries supplied with better product, but with inferior equipment or management.

According to the schedules filled in by the canner in only a few cases does the rate per box for cutting vary with the grades of fruit. Where a variation does exist it is usually made by requiring fewer pounds to the box, *i. e.*, "the boxes are not filled quite so full." Just how many pounds are deducted is not stated in any case. In some instances it is made clear that the adjustment is left to the discretion of the foreman. On the whole, however, the rate per box is the same for all sizes of one variety, the women being required frequently to do the sorting into the various grades. The best illustration of the effect which quality of fruit exerts upon producing power of the cutter is shown in Cannery No. 6 (Wage Table No. I). The records of this cannery for apricot cutting were available for two whole seasons. Its management and equipment were found by the commission to be such as to reduce to a minimum waste of time and energy. The personnel of the force during the two seasons was not materially changed, and the rate and the number of pounds to the box remained the same. Yet the production per hour in one year was but a little over 47½ pounds per hour as compared with 64 pounds per hour in the other year. In other words, the apricot cutters produced over a third more per hour and consequently earned a third more per hour on one "year's run of fruit" than on another.

Inasmuch as cannery managers buy apricots in two grades, viz: No. 1 sound fruit, running not over 12 to the pound; No. 2, running from 12 to 16 to the pound; and inasmuch as they also buy pears and peaches in two grades, it is worth while to consider the fairness and feasibility of fixing the rates for cutting on the same basis, notwithstanding the canners' committee recommendation that only one rate be fixed and that on the basis of No. 1 fruit.

This variation in quality of fruit, equipment and management is an important factor in bringing about such discrepancies in production per hour among individual canneries as are shown on the five foregoing tables. The differences in hourly earnings, of course, are affected not alone by variations of grades of fruit, equipment and management, but by the variations in rates for the same variety and grade of product. For example, although the rate for preparing apricots and pears are almost uniformly 10 cents and 15 cents per box respectively, the boxes contain anywhere from 36 to 48 pounds. Reduced to price paid per hundred pounds, the rates actually vary from $0.315 to $0.405 per hundred pounds of pears (see Table II) and from $0.177 to $0.25 per hundred pounds of apricots (see Table I).

Bearing in mind then that at present the standards of equipment and management vary from cannery to cannery it becomes important, as before stated, to note carefully what extent the production per hour and earnings for preparers in each cannery shown on the five foregoing tables vary from the general averages, at the foot of the tables, which are the only figures discussed thus far.

Referring again to the table for apricots (Table I) which shows a general average production of 58.87 pounds per hour, and an average earning of \$0.125, it becomes apparent that, in no case does the production in any single cannery shown on the table exceed the average by as much as six pounds, nor do the individual cannery earnings exceed the general average by as much as 2½ cents. In short, the production of any single cannery does not exceed the production per hour of all canneries by as much as 10 per cent. Nor do the earnings in any individual cannery exceed the earnings for all the canneries by more than 18½ per cent. On the other hand, the same table shows that the average production per hour in the individual canneries fell in one season over 16 pounds, or over 27½ per cent below the general average, though the earnings were not depressed in the same proportion owing to the fact that the cannery whose production per hour fell so far below the average paid a rate sufficiently high to yield an hourly earning better than other canneries showing more production per hour. *The fact of prime importance on the whole is that the general average shown on Table I is fairly reliable* evidence of the level of production and earnings per hour above which the majority of apricot cutters can not be counted on to rise *under present conditions.* For the table shows that of the nearly 45,000 hours, approximately 30,000 hours show an hourly production below the general average of 58.87 pounds for all canneries. Also the records for almost the same number of hours show the earnings to be substantially the same or less than the general average of \$0.125.

More striking in pears than in apricots is the variation in the weight of the boxes (see Table II) in the several canneries, the range being from 36 to 48 pounds. The rates are uniformly 15 cents per box, but reduced to a pound basis they actually vary from \$0.313 to \$0.416 a hundred pounds. The average rate paid in the six canneries was \$0.371; the average production per hour was 38.38 pounds, netting the workers an average of \$0.142 per hour.

The lowest hourly earnings shown by any individual cannery is \$0.103 and is recorded for the cannery showing the lowest rate per hundred pounds, and second lowest production per hour.

The commission has no information as to the predominant grades of pears running in the several canneries, but that a poor run of fruit is not entirely responsible for the comparatively low output per hour is indicated by the report of the commission's agent that the workers "lost time through inefficient methods." It is instructive to know also that the cannery showing the highest output per hour is one recognized as exceptionally well equipped and well managed. Not only did this cannery show the highest output per hour in the pear peeling, but as it also paid next to the highest rate per hundred pounds the earnings per hour were markedly in excess of other establishments.

It is especially important for the Wages Board to note, however, that in no other cases do the earnings for pear peelers rise more than a cent above the general average of $0.142. *In pears, then, as in apricots,* the general average should indicate the level of earnings above which the majority of preparers do not rise.

The same important fact is observable in connection with the tables for tomatoes (Table III) and those for peaches (Tables IV and V). For the great majority of hours, the production and earnings closely correspond with the general average for all canneries shown on the table.

HOURLY EARNINGS OF PACKERS.

The women engaged in filling the prepared fruit into the cans are called "packers" in the California canneries and the term is so used in this report. The packers are usually outnumbered by the preparers (*i. e.,* cutters, peelers, etc.) two and often three to one, so that the Wages Board will have accomplished the most important part of its work when it shall have determined equitable rates for the preparers.

It is to be regretted, however, that it is not possible to furnish the Wages Board with the production records for packers similar to those furnished for the preparers. This was not possible because the packers' records of number of cans filled with the several products and with the various grades of the same product could not be distinguished. Frequently there was nothing to indicate the product except the rate, and one rate was often paid for a number of products. Furthermore, the numbers of hours worked in all products and grades were combined. The best that could be done with the limited resources was to show, from the original records, the average hourly earnings of women who were engaged in filling cans, chiefly with apricots, peaches, pears and tomatoes, though assurance can not be given the Wages Board that no other products were involved.

On the other hand, the number of working hours (approximately 30,000) for which the earnings of packers were shown, are not inadequate in view of the proportion of packers to preparers. Also the eight canneries[13] furnishing these records are fairly representative of the canneries throughout the state.

Wage Table VI shows that the hourly earnings of packers in the eight canneries average $0.159. That the majority of packers are earning not more than this general average is shown by the fact that for two-thirds of the 30,000 working hours the earnings are substantially the same or less.

This question may be profitably raised for the consideration of the Wages Board: in view of the absence of records of production for packers, and in view of the fact that it can not be said that a rate is adequate until the amount which the average women can do in an hour is known, would it not be part of wisdom, either—

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[13] The Bonner Fruit Co., The Pasadena Canning Co., Pratt-Low Preserving Co. (Santa Clara), J. H. Flickinger, Griffin-Skelley Co. (Oakland), Central California Canneries (Sacramento), C. F. C. A. (San Francisco) and Central California Canneries (San Lorenzo).

(1) To refrain from fixing rates for packers until adequate records are available; or

(2) To fix a time rate for packers pending the availability of production records.

The packers in Eastern canneries are paid quite generally upon a time rate basis so that proposition No. 2 ought not to be impracticable.

WAGE TABLE VI.

Hourly Earnings of Women Packing Apricots, Peaches, Pears and Tomatoes in Selected Canneries of California.

Cannery No.	Hours worked	Part of season represented	Average hourly earnings
6	5,081	Weeks ending June 20, 27; July 4, 11, 18, 25; August 1, 8, 15	.141
	5,075	Weeks ending July 3, 10, 24, 31; August 7, 14	.1927
30	2,858	Weeks ending July 3, 10, 17, 31; August 14, 21	.158
57	1,360.50	Weeks ending Sept. 15, 22	.155
2	10,649.25	Weeks ending July 4, 11, 18	.13
21	1,749.50	July 15, 17, 23, 30; August 10	.17
56	2,218	August 12, 27, 28, 31	.2098
53	610.50	Week ending October 9	.167
11	195.5	July 4, 10, 11, 12, 13	.11
	29,797.25	Totals	.159

On January 13, 1916, a wage board in the fruit and vegetable canning industry met at the office of the commission in San Francisco. Its report follows:

REPORT OF WAGE BOARD
IN THE FRUIT AND VEGETABLE CANNING INDUSTRY.

Submitted by KATHERINE PHILLIPS EDSON, Chairman of Wage Board.

To the Industrial Welfare Commission
of the State of California:

Pursuant to your instructions of January 21st, I submit the following report as chairman of the Wage Board in the Fruit and Vegetable Canning Industry of California.

Convened Thursday, January 13, 1916, at ten o'clock a.m. at Room 815, Mechanics Building, San Francisco.

The Wage Board consisted of E. H. Kennedy, Bonner Fruit Co., Lankershim; R. I. Bentley, California Fruit Canners' Association, San Francisco; and Andrew G. Griffin, Griffin & Skelley Co., San Francisco, representing the employing canners; and Mrs. Isabel Schmitz, Berkeley; Mrs. Erma Corey, Sacramento; and Miss Jennie Balistreri, San Francisco, representing the employees in the canning industry. All six representatives are actively engaged in the canning industry of the state and expect to continue as employers and workers.

The chairman gave a preliminary explanation of the duties and purposes of the commission and of the Wage Board, and also explained that while extensive investigations had been made in the other industries employing women, the canning industry was the one chosen first for consideration because the commission appreciated that it was necessary for that industry to have its rulings early so that they might make any desired changes before the season of 1916.

The following program was adopted as the procedure for discussion:

Cost of Living—
  Analysis of Schedule.
  Consideration of Items.
  Determination of Living Wage.

Wage—
  Consideration of basis of wage—time—piecework.
  Tentative determination of basis of earning capacity, *i. e.*, number of hours of work required to earn living wage.
  Classification of employment for separate consideration:
    Cutters.
    Canners.
    All others.

- Cutters—
  - Consideration and determination of rates for different varieties, and basis of computation.
  - Definition of just what work is to be done for rate paid.
- Records—
  - Methods of keeping records of work done.
  - Duplicate records for employees.
  - Records for the commission.
- Canners—
  - Consideration and determination of rates.
  - Advisability of time rate or piece rate with guaranteed minimum—per hour—day—week.
- Records.
  - As above.
- All Others—
  - Including time workers, checkers, forewomen, labelers (8 hour basis for labelers—separate consideration).
  - Consideration and records as above.

Hours—

- Consideration and determination of limitation of hours.
- Limitation by week—day.
- Exempted period (number of days, specific dates, specific period).
- Maximum limit during exempted period.
- Overtime—
  - Manner of payment (increased time rates, increased piece rates).
  - Transcript of record of overtime.
- Time to be allowed for noonday meal, supper in case of overtime work.

Conditions of Employment—

- Consideration and determination of standards.
- Tentative standards of State Board of Health.
- Rest rooms.
- Proper eating places.
- Seats for women while employed.
- Prohibition—requiring or permitting women to carry boxes of fruit.

After submitting data on the minimum cost of living of a self-dependent woman in California, furnished by the commission, it was decided, after extended discussion, that owing to the fact that the piece rate form of payment was the prevailing one in the canning industry and that the earnings of the women would be increased by the changes incident to the standardization of the weights of the boxes of fruit and vegetables, elimination of lost time, etc., required by the commission, that the question of the Wage Board's recommendation on the cost of living be deferred until more extended investigation of the results of such proposed rates could be had.

The employers' representatives stated further that, inasmuch as the past rates were such as to take women out of some of the regular industries of the state for their short season of seven weeks, they believed it would not be fair for them to set a wage which might be entirely possible for their industry, with its short season, but which would establish a precedent which might be unfair to industries employing women throughout the year. They further stated that they believed they could propose rates which would yield what the commission would consider as their pro rata of the yearly living wage.

The canners' representatives said that the Advisory Committee of the Canners' League of California had submitted to the commission a tentative schedule of minimum rates, which they believed should stand as the employers' recommendations for consideration by the Wage Board. They also suggested that, inasmuch as the employers' representatives were willing to submit a schedule of rates, the representatives of the workers be requested to do likewise. This suggestion was unanimously adopted and the meeting was adjourned until January 14th, at two o'clock p.m., to allow the workers' representatives to prepare their recommendations, and for all to familiarize themselves with the data and hourly production records submitted by the commission.

At two o'clock p.m., January 14th, the Wage Board met and proceeded to submit recommendations as to minimum rates and standard conditions of employment.

The following recommendations were submitted by the representatives of the employers:

SEPTEMBER 30, 1915.

To the Industrial Welfare Commission
of the State of California:

The Committee of Canners, appointed at your request to act in an advisory capacity, begs to report that several meetings have been held at which the subject of standardizing working conditions for women in the canneries of the state has been given very earnest consideration.

We wish to express our appreciation of the courtesy you have extended by inviting us to make recommendations to you in advance of the adoption by you of any regulations governing women employees in canneries.

We are particularly indebted to your secretary, Mr. Scheel, for the very comprehensive data furnished this committee, which has been of the greatest value to us in dealing with this very complex subject.

We also desire to take this opportunity of saying that we shall be very glad to cooperate with you at all times and in any way that we can be of assistance in standardizing working and sanitary conditions affecting women employees.

We are submitting two schedules as prepared in Mr. Scheel's office:

	No. 1 fruit	No. 2 fruit
Peaches, clings	$.20 per 100 lbs.	$.25 per 100 lbs.
Peaches, free	.10 per 100 lbs.	.125 per 100 lbs.
Apricots	.20 per 100 lbs.	.25 per 100 lbs.
Pears	.325 per 100 lbs.	.40 per 100 lbs.
Cherries	.25 per 100 lbs.	.25 per 100 lbs.
Tomatoes—per 12 qts.		$.03

We further recommend that the minimum rate for filling or packing fruit in cans be as follows:

No. 2½ cans	$.01½ per doz.
No. 10 cans	.036 per doz.

and that the minimum rate for filling tomatoes be $.01 per dozen.

It is the unanimous opinion, however, of the committtee that in order to avoid complications only one schedule for preparing fruit be adopted, at least for the first year.

That it is the belief of the committee that work on the No. 2 fruit will adjust itself, compelling a price proportionate to price paid for working No. 1 fruit.

In the event that the commission decides two schedules are necessary, the Advisory Committee requests the privilege of an audience with the commission to discuss the subject.

We recommend that the minimum rate per hour for women be ten cents for beginners and that fifteen cents per hour be the minimum rate for experienced workers.

We are not prepared at this time to submit any recommendations regarding the hours of work per day or week, as we believe that any such restriction would more seriously affect other interests than it would our own.

Very truly yours,

CANNERS' ADVISORY COMMITTEE,
R. I. BENTLEY,
R. M. BARTHOLD,
A. G. GRIFFIN,
G. E. GRIER,
E. H. KENNEDY,
E. E. CHASE,
The Committee.

The workers' representatives then submitted the following recommendations. These had been carefully considered after studying such data as had been made accessible to the Canners' Committee and which had been furnished them by the commission:

JANUARY 14, 1916.

To the Wage Board on the Fruit and Vegetable Canning Industry:

We herewith submit schedule of rates which we consider to be the minimum rates that should be paid in the fruit and vegetable canning industry:

Cutting—

Cling peaches, not to exceed two grades, 25c per 100 lbs. or 10c per box 40 lbs.

Free Peaches, not to exceed three grades, 17½c per 100 lbs. or 7c per box, 40 lbs.

Apricots, not to exceed eight grades, 25c per 100 lbs. or 10c per box, 40 lbs.

Pears, not to exceed nine grades, 37½c per 100 lbs. or 15c per box, 40 lbs.

Tomatoes, not to exceed three grades, 4c per bucket of 12 qts.

These rates to cover all grades of fruit, with the understanding that the smaller fruit is equally distributed with the larger.

Canning—

All fruit

No. 2½ Pie and Water grades, 1½c per doz. cans.

Standards, sorting to 2″, 2c per doz. cans.

Extras, 3c per doz. cans.

No. 10 Pie and Water grades, .036 per doz. cans or .015 per tray of 5 cans.

Standards, .048 per doz. cans or .02 per tray of 5 cans.

Extras, .072 per doz. cans or .03 per tray of 5 cans.

Tomatoes

No. 2½ Standards, 1c per doz. cans.

No. 2½ Solid Pack, not sorted, 1½c per doz. cans.

No. 2½ Solid Pack, sorted, 2c per doz. cans.

No. 10 Standards, .024 per doz. cans or .01 per tray of 5 cans.

Solid Pack, not sorted, .036 per doz. cans or .01½ per tray of 5 cans.

Solid Pack, sorted, .048 per doz. cans or .02 per tray of 5 cans.

All these rates are based on fruit and cans being delivered to the canning table.

Day Work—

All inexperienced day workers to receive not less than 15c per hour.

All experienced workers to receive not less than 17½c per hour.

An inexperienced worker shall be deemed one who has worked in a cannery during one whole canning season.

We believe that the normal day in the fruit and vegetable canning industry should be ten (10) hours, and the normal week sixty (60) hours.

All work performed after ten (10) hours shall be on an overtime basis. Overtime shall be paid at the rate of *one and one-half* times the adopted rates. In no event, however, shall the hours of labor exceed twelve (12) hours in any one day, or more than seventy-two (72) hours in any one week.

Respectfully submitted,

ISABEL SCHMITZ,
ERMA COREY,
JENNIE BALISTRERI,
Representing the Employees.

The workers' representatives stated in explanation of their recommendations that they believed the piece rate basis of payment was the one for them to consider at present, inasmuch as the greatest percentage of the workers were now under this system.

It was then decided by the board to confine the discussion of rates to a piece rate basis.

It was also agreed that the rates of pay for preparing apricots, peaches, pears and tomatoes would be sufficient to consider this year, as they constitute 80 per cent of the fruit and vegetable pack of the state.

After a very profitable afternoon spent in the discussion of these two schedules, the board adjourned until Monday, January 17th, at ten o'clock a.m., thus giving time for conference and further study of the submitted data.

On the morning of January 17th the Wage Board continued further the discussion of rates. Much interesting information was developed by both sides, the employees especially bringing out clearly the loss to the worker because of inadequate instruction as to the best and quickest way of cutting and canning fruit. Also the loss to them caused by waste time, inefficient management, and by requiring them in some canneries to carry fruit and waste and trays on their own time, thus reducing their piecework earnings materially. Many instances were cited of the handicaps to the workers in arriving at their highest productivity. This seemed of great interest to the employers. The piece rates on tomatoes precipitated a discussion of the disagreeable features of peeling and canning tomatoes. It was even stated by the workers that it was an occupation fraught with health hazards because of the unusual amount of dampness and steam to which the workers were subject. For this reason they believed that they should be paid a rate which would yield a higher earning than on fruit.

After a full discussion of all products it was agreed to adjourn until Tuesday, January 18th, at two o'clock p.m., for the final recommendations.

On January 18th at two o'clock p.m., the Wage Board proceeded to its final discussion of minimum rates. The canners' representatives said that they believed their recommendations, with the improved working conditions that the commission would introduce, would yield a good wage. The workers' representatives said that they had seriously considered the matter and would accept the canners' rates on apricots and peaches under certain conditions. They called attention to the confusion consequent to working on two rates of pay on the same variety of fruit, and said they believed the workers would prefer one rate for all grades. They further said they believed it should be a higher rate than the canners' recommended rate of $.20 per hundred pounds for No. 1 fruit. A recess was taken to allow for the discussion of this proposal.

After the recess, the workers' representatives submitted the following schedule, which was a compromise between the workers' rates (which in some instances were the same as the employers' rates for No. 2 fruit) and the employers' rates on No. 1 fruit.

We, the representatives of employees on the Canning Wage Board, submit the following schedule of minimum rates for consideration by the board:

Cutting.

	Per 100 lbs.	Per 40 lbs.
Apricots	$.225	$.09
Pears	.375	.15
Peaches, cling	.225	.09
Peaches, free	.125	.05
Tomatoes—per 12 quarts		$0.35

Canning.

	Per dozen cans
Fruit—	
No. 2½	$.015
No. 10	.036
Tomatoes—	
No. 2½	.01
No. 10	.024

ISABEL SCHMITZ,
ERMA COREY,
JENNIE BALISTRERI.

A further recess of fifteen minutes was taken to discuss this proposal.

Upon the reconvening of the board the canners' representatives said that they would accept all the fruit rates but could not accept the rate of 3½ cents a bucket on tomatoes. In explanation of their refusal to accept this rate, the canners' representatives explained that while the California canning industry had little to fear from interstate competition in the disposal of their fruit, there existed a keen competition in tomatoes; that generally they were packed as a leader for business and that there was but little profit in their production. It was further stated by the canners' representatives that they believed great concessions had been made in raising all their fruit rates and they were confident that with the improved management, eliminating lost time, and the standardization of the sizes of boxes of fruit and vegetables to be cut, due to setting the cutting rate on a hundred-pound basis, that the women would average a much higher hourly production than in the past.

It was definitely understood by both sides that careful records were to be kept by the canneries on all products, to find out what the proposed rates would yield. If they did not yield the hourly earnings that would equal the amount determined by the commission as covering the "necessary cost of living" while engaged in the industry, then the piece rates would necessarily have to be raised next season. The representatives of the workers accepted the change in the tomato rate upon the above understanding.

The Wage Board unanimously accepted the following minimum rates of pay for cutting and canning of fruits and vegetables:

Cutting.

	Per 100 lbs.	Box 40 lbs.
Apricots	$.225	$.09
Pears	.375	15
Peaches, cling	.225	.09
Peaches, free	.125	.05
Tomatoes—per dozen quarts		$.03

Canning.

	Per dozen cans
Fruit, No. 2½	$.015
Fruit, No. 10	.036
Tomatoes, No. 2½	.01
Tomatoes, No. 10	.024

The question of payment for "day work" was referred to the commission. The board called attention to the fact that probably less than 5 per cent of the women engaged in the industry work upon a "day work" basis.

I would like to call your attention to the effect of these recommended rates upon the industry, and the gain to the women working in the industry, if the commission accept them.

I regret that I can not submit to you in tonnage the exact proportion of the yearly pack affected by these recommendations, but the canners preferred to withhold this information this year.

In the season of 1915 43 per cent of the canneries packing apricots paid a lower rate than $.225 per hundred pounds, or $.09 per 40-pound box. It will mean a gain to the women working in these canneries of from 1 to 4 cents per box of 40 pounds. Sixteen per cent of the canneries packing apricots paid $.225 per hundred pounds and 41 per cent were paying above that rate. Apricots are 19.1 per cent of the entire fruit pack of the state.

Of the canneries packing free peaches, 19 per cent paid less than $.125 per hundred pounds, or 5 cents per box of 40 pounds of fruit. It means a gain in these canneries of 1 cent per box of 40 pounds of fruit. Thirty-eight per cent of the canneries were paying $.125 per hundred pounds, and 43 per cent paid above this rate. Free peaches are 14.9 per cent of the entire fruit pack of the state.

Of the canneries packing pears, 36 per cent paid less than $.375 per hundred pounds, or 15 cents per box of 40 pounds for peeling. It means a gain to the women in these canneries of from 1 to 3 cents per box of 40 pounds. Thirty per cent of the canneries paid this rate, and 34 per cent paid above this rate. Pears are 13.5 per cent of the entire fruit pack of the state.

Of the canneries packing cling peaches, 58 per cent paid less than $.225 per hundred pounds, or 9 cents a box of 40 pounds. It will mean a gain to the women in these canneries of from 1 to 4 cents per box of 40 pounds. Twenty per cent of the canneries paid this rate, and 22 per cent above this rate. Cling peaches are 43.9 per cent of the total fruit pack of the state.

Therefore, the recommended rates of the Wage Board would materially raise the earnings of the women who prepare these four products, which are 91.4 per cent of the total fruit pack of the state.

Of the canneries which reported canning tomatoes, 18 per cent paid less than 3 cents per 12-quart bucket. The tomato pack is 21 per cent of the entire fruit and vegetable pack of the state.

When you consider that these gains have been made by the unanimous recommendation of the Wage Board, and that the canneries affected by one or more rates employ throughout the season over 10,000 women, I think we may feel that this first Wage Board has been highly successful.

THE LIMITATION OF HOURS.

In the discussion of the recommendations submitted by both sides as to the limitation of hours, the representatives of the employers stated that they stood by the proposals of the Canners' Advisory Committee. In questioning the representatives of the workers as to the reason for their demands they said that they realized the seasonal nature of the industry and that the same reasons for the shorter day might not exist; that they knew that in certain localities it was difficult to collect for so short a time a labor supply sufficiently large to handle the emergencies that come with the glut of the fruit season. Therefore they were willing to consider an emergency overtime under some kind of protective regulation. However, the workers had found out from experience that the depreciation of their earning power consequent to the fatigue of long hours was a very real loss, therefore they believed that they should be compensated by a higher rate of pay for such work.

In answer to my question as to the fairness of the operatives' demand for time and one-half for overtime the canners' representatives said it would result in absolutely no overtime, as such a rate they considered prohibitive. In conclusion of this discussion the canners said they were willing to leave this matter to the commission, believing the commission would not make any drastic regulations that would too greatly handicap the industry.

The employees' representatives said that they, too, were willing to leave it to the commission, as they believed they would receive protection from excessive hours.

Both sides were satisfied with the tentative suggestions for sanitary regulations agreed to by the State Board of Health.

The Wage Board referred to the commission the method of keeping records that would be complete enough to give accurate information as to the effect of its rulings, with the understanding that the commission would work out the proper kind of records with representatives of the industry.

We were indeed fortunate in the personnel of our first Wage Board. We are indebted to them for their sincere and honest effort to deal justly with the claims of either side.

In conclusion, I wish to call your attention to the fact that we met with the same cordial spirit of cooperation from the canners' representatives that the employers of the state have accorded our commission's efforts from the beginning of our work. I believe that upon holding and developing this confidence in the sincerity and fairness of the commission depends largely the future success of this pioneer work, for we know that the watchword of modern industrial life is "Cooperation."

Respectfully submitted.

KATHERINE PHILIPS EDSON,
Chairman of Wage Board.

APPENDIX I.

San Francisco, January 18, 1916.

To The Industrial Welfare Commission of the State of California:

We, the undersigned, members of the Wage Board called by your Honorable Commission in the fruit and vegetable canning industry, after carefully considering the wages, hours and conditions of labor in the said industry, have the honor to submit herewith the following schedule of estimated minimum piece rates to be paid to women in the fruit and vegetable canning industry of the State of California:

Cutting	Per 100 lbs.	Box of 40 lbs.
Apricots	$.225	$.09
Pears	.375	.15
Peaches, cling	.225	.09
Peaches, free	.125	.05

Tomatoes—per 12 quarts $.03

Canning	Per dozen cans
Fruit, No. 2½	$.015
Fruit, No. 10	.036
Tomatoes, No. 2½	.01
Tomatoes, No. 10	.024

We do not make any recommendations concerning hours and conditions of labor as we believe that these questions can best be left to your Honorable Commission to determine.

(Signed) E. H. KENNEDY,
R. I. BENTLEY,
A. G. GRIFFIN,
Representing the Employers.
ISABEL SCHMITZ,
ERMA COREY,
JENNIE BALISTRERI,
Representing the Employees.
KATHERINE PHILIPS EDSON,
Representing the commission.

Attest:
H. A. Scheel,
Secretary ex officio.

APPENDIX II.

TENTATIVE DRAFT OF SANITARY STANDARDS AS AGREED TO BY THE STATE BOARD OF HEALTH AND SUBMITTED TO WAGE BOARD.

(1) *Lighting.*—Every workroom (hereafter constructed) must be supplied with adequate natural light during the working daylight hours.

Every workroom (now constructed and which is not so equipped as to furnish adequate natural light during the working daylight hours) must be supplied with sufficient artificial light properly placed. Every workroom must be supplied during the working hours when daylight is not available with sufficient artificial light properly placed.

(2) *Ventilation.*—The ventilation of each workroom shall be adequate and there shall be sufficient provision for preventing excessive humidity by the removal of escaping steam.

(3) *Floors.*—Each workroom *shall have an impermeable floor, made of cement or tile laid in cement, brick, wood or other suitable nonabsorbent material which can be flushed and washed clean with water.* Floors must be tight and hard and in good repair, and be pitched to provide for drainage so that there will be no unreasonable depth of water. All excess of water or overflow must be immediately removed. Where women work, racks must be provided, height of rack to be not less than three inches.

(4) *Toilet Rooms.*—Toilet rooms shall be completely partitioned off from workrooms and the doors must be so located, or protected by screen, that the water-closet compartment shall not be visible from the outside.

(5) *Lighting of Toilet Rooms.*—Toilet rooms shall have adequate natural or artificial light so that every part of the room and of the interior of each compartment shall be easily visible.

(6) *Ventilation of Toilet Rooms.*—Toilet rooms shall be sufficiently ventilated and the ventilation shall be only to the outside of the building.

(7) *Floors of Toilet Rooms.—The floors of such toilet rooms shall be of cement, tile laid in cement, wood, brick, or other nonabsorbent material, and shall be washed and scoured daily and shall be kept in good repair.*

(8) *Walls of Toilet Rooms.*—All walls of toilet rooms and water-closet compartments, unless constructed of glazed tile, brick, etc., shall be kept covered with a nonabsorbent light-colored paint, varnish or other impervious compound.

(9) *Water-closet Compartments.*—Every water-closet shall be in a separate compartment, which must be not less than twenty-eight inches wide, and provided with a door.

(10) *Partitions of Water-closet Compartments.*—Partitions of water-closet compartments shall be not less than six feet high and shall extend not nearer the ceiling and floor than one foot.

(11) *Number of Water-closets.*—The number of water-closets shall be not less than one to every twenty women employed, or majority fraction thereof, based on the maximum number of women employed at one time.

(12) *Types of Water-closets.*—Every water-closet shall have a bowl of vitreous china, or of first quality cast-iron, porcelain enameled inside and out, or of other approved material. Every such bowl shall be provided with adequate facilities for flushing and shall be set entirely free from enclosing woodwork and so installed that the space around it can be easily cleaned.

(13) *Water-closet Seats.*—The bowls of water-closets shall be provided with seats of wood or other non-heat absorbing material and shall be coated with varnish or some other waterproof substance.

(14) *Toilet Paper.*—An adequate supply of toilet paper shall be provided in every water closet compartment.

(15) *Cleaning of Toilets.*—All toilets shall be kept clean and the bowls and seats of water closets shall be scrubbed at least once a day. All toilets, wash rooms, lavatories and water-closet compartments shall be kept clean.

(16) *Water Supply.*—Each place of employment shall be supplied with sufficient pure drinking water, and the faucets shall be placed so that they are convenient to the employees. Common drinking cups are prohibited. Individual cups must be used or sanitary drinking fountains must be installed.

(17) *Wash Rooms.—Wash rooms and lavatories shall be adjacent to toilet rooms and shall be supplied with soap, running water and towels and shall be maintained in a clean and sanitary condition.*

(18) *Number of Wash Bowls.*—The number of wash bowls, sinks or other appliances shall be not less than one to every twenty women. Twenty inches of sink with one faucet shall be considered as an equivalent of one wash bowl. The use of spring faucets is prohibited.

NOTE.—Sections in italics are provisions of present state law, Statutes 1909, chapter 104.

Subsequent to the deliberations of the wage board a public hearing in the fruit and vegetable canning industry was held at San Francisco on February 11, 1916, at which numerous representatives of the canning industry and employees met and discussed fully the problems of hours, wages and working conditions in the canneries.

The result of these deliberations was the issuance by the commission on February 14, 1916, of the following orders, which became effective sixty days thereafter:

INDUSTRIAL WELFARE COMMISSION.

State of California.
948 Market Street, San Francisco.

To Whom it May Concern:

TAKE NOTICE: That pursuant to and by virtue of the authority vested in it by the Statutes of California, 1913, Chapter 324, and amendments thereto, and after public hearing duly had in the City and County of San Francisco, on Friday, February 11, 1916,

THE INDUSTRIAL WELFARE COMMISSION OF THE STATE OF CALIFORNIA does hereby order that:

1. No person, firm or corporation shall employ or suffer or permit any woman or minor to work in the fruit and vegetable canning industry in any of the following occupations at piecework rates less than the following:

Occupation	Variety	Minimum piece rate
Cutting	Apricots	$0.225 per 100 lbs. (or $0.09 per 40 lbs.)
Cutting	Pears	0.375 per 100 lbs. (or 0.15 per 40 lbs.)
Cutting	Cling peaches	0.225 per 100 lbs. (or 0.09 per 40 lbs.)
Cutting	Free peaches	0.125 per 100 lbs. (or 0.05 per 40 lbs.)
Cutting	Tomatoes	0.03 per 12 quarts

Occupation	Variety	Size of can	Minimum piece rate
Canning	All varieties of fruit	No. 2½	$0.015 per dozen cans
Canning	All varieties of fruit	No. 10	0.036 per dozen cans
Canning	Tomatoes	No. 2½	0.01 per dozen cans
Canning	Tomatoes	No. 10	0.024 per dozen cans

2. No person, firm or corporation shall employ or suffer or permit any woman or minor to work in the fruit and vegetable canning industry in any occupation at time rates less than the following:

Class	Minimum time rate
Experienced hands	$0.16 per hour
Inexperienced hands	0.13 per hour

Any woman or minor shall be deemed an experienced hand who has worked in the said industry for more than three weeks, and every employer in the fruit and vegetable canning industry shall, when demand is made by any woman or minor employed, furnish such employee with a statement setting forth the period of employment of such employee in his establishment.

3. No person, firm or corporation shall employ or suffer or permit an adult woman, eighteen years of age or over, to work in the fruit and vegetable canning industry for more than ten hours in any one day, or more than sixty hours in any one week, except in case of emergency; *provided, however,* that in no case shall the hours of employment of any woman exceed seventy-two hours in any one week; *provided, further,* that the provisions of this section shall not apply to those occupations coming under the provisions of the Statutes of California, 1913, Chapter 352, "An act limiting the hours of labor of females," etc.

4. No person, firm or corporation shall employ or suffer or permit an adult woman, eighteen years of age, or over, to work in case of emergency at a wage less than one and one-fourth times the foregoing minimum time or piece rates. Emergency work shall be all work performed by any woman in excess of ten hours in any one day, or all work performed by any woman or minor in excess of six calendar days in any one week.

5. No person, firm or corporation shall employ or suffer or permit any minor child, under the age of eighteen years, to work in the fruit and vegetable canning industry for more than eight hours in any one day, or more than forty-eight hours in any one week.

6. Every person, firm or corporation employing women and minors in the fruit and vegetable canning industry shall keep a record of the work done and time worked by such women and minors. Such records shall be kept in a manner and form approved by the Industrial Welfare Commission.

7. Every person, firm or corporation employing women and minors in the fruit and vegetable canning industry shall post a copy of this order in a conspicuous place in each room in which women and minors are employed.

This order shall become effective sixty (60) days from the date hereof.

Dated at San Francisco, California, this 14th day of February, 1916.

INDUSTRIAL WELFARE COMMISSION,
State of California.
Frank J. Murasky, *Chairman.*
Katherine Philips Edson.
Walter G. Mathewson.
A. B. C. Dohrmann.

Attest: H. A. Scheel, *Secretary.*

"Every employer or other person who, either individually or as an officer, agent or employee of a corporation, or other persons, violates or refuses or neglects to comply with the provisions of this act, or any orders or rulings of this commission, shall be guilty of a misdemeanor, and upon conviction thereof be punished by a fine of not less than fifty dollars, or by imprisonment for not less than thirty days, or by both such fine and imprisonment."

"For the purposes of this act, a minor is defined to be a person of either sex under the age of eighteen years."

INDUSTRIAL WELFARE COMMISSION.

State of California.
948 Market Street, San Francisco.

To Whom it May Concern:

TAKE NOTICE: That pursuant to and by virtue of the authority vested in it by the Statutes of California, 1913, Chapter 324, and amendments thereto, and after public hearing duly had in the City and County of San Francisco, on Friday, February 11, 1916,

THE INDUSTRIAL WELFARE COMMISSION OF THE STATE OF CALIFORNIA does hereby order that:

I. No person, firm or corporation shall employ or suffer or permit any woman or minor to work in any fruit or vegetable canning establishment in which the conditions of employment are below the following standards:

(1) *Lighting.*—Every workroom (hereafter constructed) must be supplied with adequate natural light during the working daylight hours.

Every workroom (now constructed and which is not so equipped as to furnish adequate natural light during the working daylight hours) must be supplied with sufficient artificial light properly placed.

Every workroom must be supplied during the working hours when daylight is not available with sufficient artificial light properly placed.

(2) *Ventilation.*—The ventilation of each workroom shall be adequate and there shall be sufficient provision for preventing excessive humidity by the removal of escaping steam.

(3) *Floors.*—Each workroom shall have an impermeable floor, made of cement or tile laid in cement, brick, wood or other suitable nonabsorbent material which can be flushed and washed clean with water. Floors must be tight and hard and in good repair, and be pitched to provide for drainage so that there will be no unreasonable depth of water. All excess of water or overflow must be immediately removed. Wooden racks shall be provided wherever women are obliged to work on wet floors, or cement or tile floors and such racks shall be not less than three inches in height.

(4) *Toilet Rooms.*—Toilet rooms shall be completely partitioned off from workrooms and the doors must be so located, or protected by screen, that the water-closet compartment shall not be visible from the outside.

(5) *Lighting of Toilet Rooms.*—Toilet rooms shall have adequate natural or artificial light so that every part of the room and of the interior of each compartment shall be easily visible.

(6) *Ventilation of Toilet Rooms.*—Toilet rooms shall be sufficiently ventilated and the ventilation shall be only to the outside of the building.

(7) *Floors of Toilet Rooms.*—The floors of such toilet rooms shall be of cement, tile laid in cement, wood, brick, or other nonabsorbent material and shall be washed and scoured daily and shall be kept in good repair.

(8) *Walls of Toilet Rooms.*—All walls of toilet rooms and water-closet compartments unless constructed of glazed tile, brick, etc., shall be kept covered with a nonabsorbent light-colored paint, varnish or other impervious compound.

(9) *Water-closet Compartments.*—Every water-closet shall be in a separate compartment which must be not less than twenty-eight inches wide and provided with a door.

(10) *Partitions of Water-closet Compartments.*—Partitions of water-closet compartments shall be not less than six feet high and shall extend not nearer the ceiling and floor than one foot.

(11) *Number of Water-closets.*—The number of water-closets shall be not less than one to every twenty women employed, or majority fraction thereof, based on the maximum number of women employed at one time.

(12) *Types of Water-closets.*—Every water-closet shall have a bowl of vitreous china, or of first quality cast-iron, porcelain enameled inside and out, or of other approved material. Every such bowl shall be provided with adequate facilities for flushing and shall be set entirely free from enclosing woodwork and so installed that the space around it can be easily cleaned.

(13) *Water-closet Seats.*—The bowls of water-closets shall be provided with seats of wood or other nonheat absorbing material and shall be coated with varnish or some other waterproof substance.

(14) *Toilet Paper.*—An adequate supply of toilet paper shall be provided in every water-closet compartment.

(15) *Cleaning of Toilets.*—All toilets shall be kept clean and the bowls and seats of water-closets shall be scrubbed at least once a day. All toilets, wash-rooms, lavatories and water-closet compartments shall be kept clean.

(16) *Water Supply.*—Each place of employment shall be supplied with sufficient pure drinking water and the faucets shall be placed so that they are convenient to the employees. Common drinking cups are prohibited. Individual cups must be used or sanitary drinking fountains must be installed.

(17) *Wash Rooms.*—There shall be wash rooms and lavatories adjacent to toilet rooms; and all wash rooms and lavatories shall be supplied with soap, running water and towels, and shall be maintained in a clean and sanitary condition. Common towels shall not be used or permitted and individual or paper towels must be supplied.

(18) *Number of Washbowls.*—The number of washbowls, sinks, or other appliances shall be not less than one to every twenty women. Twenty inches of sink with one faucet shall be considered as an equivalent of one washbowl.

Spring faucets shall not be used except where washbowls are provided.

(19) *Locker Rooms.*—A suitable room shall be provided where women may change their clothing. A sufficient number of lockers shall be provided.

(20) *Time for Meals.*—Every woman and minor shall be entitled to at least one hour for noonday meal; *provided, however,* that no woman or minor shall be permitted to return to work in less than one-half hour.

(21) *Seats.*—Seats shall be provided for each and every woman employed and such women shall be permitted to use the seats at all times. Seats shall be of such types as approved by the Industrial Welfare Commission.

(22) *Carrying.*—No woman shall be required or permitted to carry any box, box of fruit, vegetable or refuse, or trays of cans, or any heavy burden to or from her place of work in the establishment.

II. Every person, firm or corporation employing women and minors in the fruit and vegetable canning industry shall post a copy of this order in a conspicuous place in each room in which women and minors are employed.

This order shall become effective sixty (60) days from the date hereof.

Dated at San Francisco, California, this 14th day of February, 1916.

INDUSTRIAL WELFARE COMMISSION,
State of California.
FRANK J. MURASKY, *Chairman.*
KATHERINE PHILIPS EDSON.
WALTER G. MATHEWSON.
A. B. C. DOHRMANN.

Attest: H. A. SCHEEL, *Secretary.*

"Every employer or other person who, either individually or as an officer, agent or employee of a corporation, or other persons, violates or refuses or neglects to comply with the provisions of this act, or any orders or rulings of this commission, shall be guilty of a misdemeanor, and upon conviction thereof be punished by a fine of not less than fifty dollars, or by imprisonment for not less than thirty days, or by both such fine and imprisonment."

"For the purposes of this act, a minor is defined to be a person of either sex under the age of eighteen years."

FINANCIAL STATEMENT

Expenditures from July 1, 1915, to June 30, 1916.

San Francisco Office.

Commissioners per diems	$3,110 00
Wages board per diems	150 00
Traveling expenses, commissioners	1,659 72
Traveling expenses, wages board	95 85
Traveling expenses, employees	912 14
Salary, secretary	2,561 84
Salary, stenographers, clerks	1,916 00
Salary, special agents	3,465 22
Salary, experts	1,650 00
Miscellaneous	25
State treasurer	10 00
Supplies	88 35
Printing	211 98
Multigraphing	46 15
Rent	611 60
Telephone and telegraph	259 61
Postage	150 00
Press clippings	60 00
General expense	263 00
Express	28 31
Advertising	125 67
Furniture and equipment	46 52

Los Angeles Office.

Supplies	3 00
Multigraphing	4 40
Rent	204 89
Telephone and telegraph	166 05
General expense	90 62
Furniture and equipment	17 65
	$17,908 82

NOTE.—In this total is included a balance from special appropriation, of $2,992.75.

REPORT

OF THE

State Water Commission of California

PUBLISHED JANUARY 1, 1917

CALIFORNIA STATE PRINTING OFFICE
SACRAMENTO
1917

27485

STATE WATER COMMISSION.

HIRAM W. JOHNSON, *Governor* (ex officio)	Sacramento, California
W. F. McCLURE, *State Engineer* (ex officio)	Sacramento, California
W. A. JOHNSTONE, *President*	San Dimas, California
A. E. CHANDLER	Berkeley, California
IRVING MARTIN	Stockton, California

We are indebted for many of the photos from which cuts in this report were made to the San Francisco offices of the United States Forest Service and United States Geological Survey; also, to the State Mining Bureau for cuts of maps.

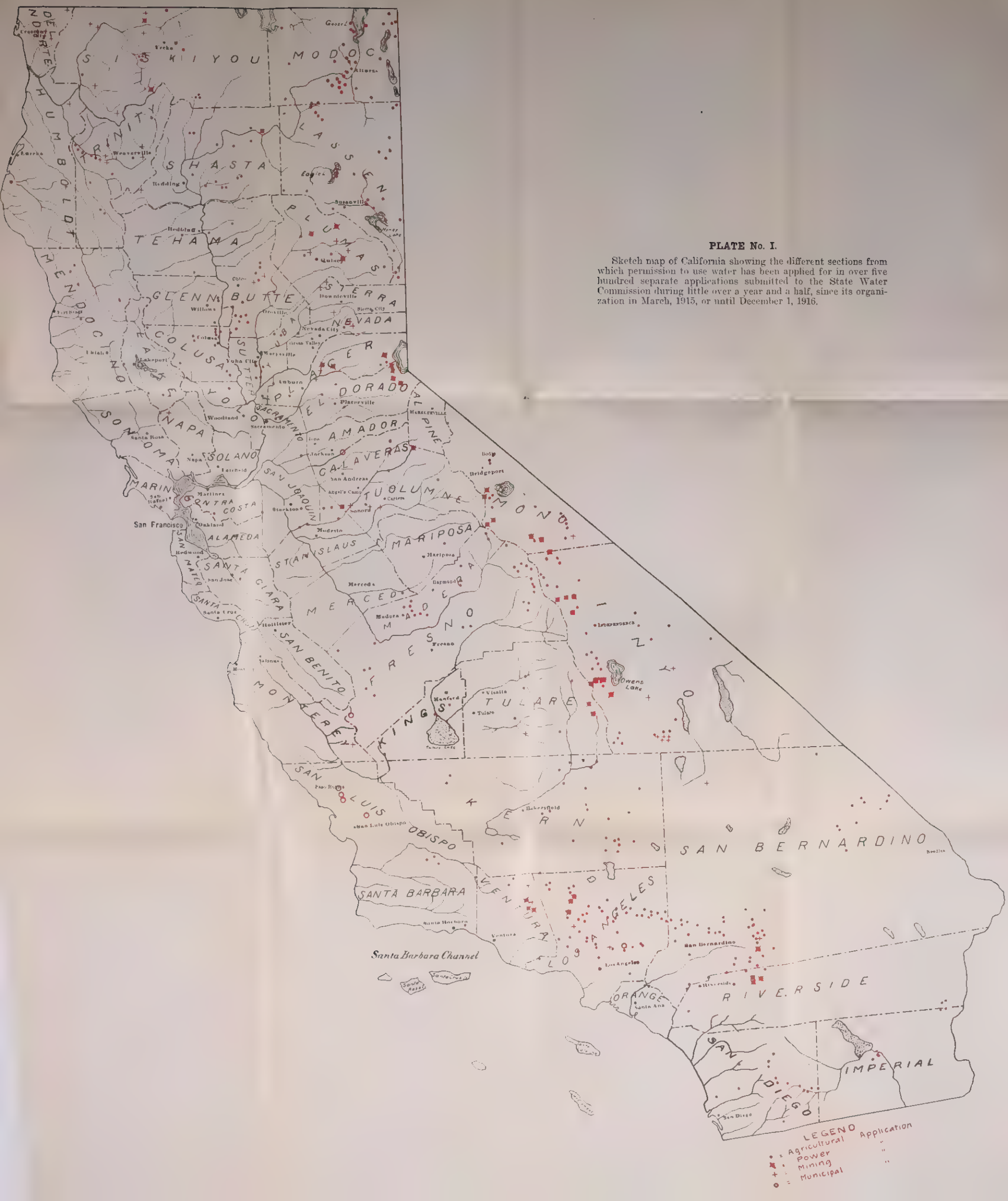
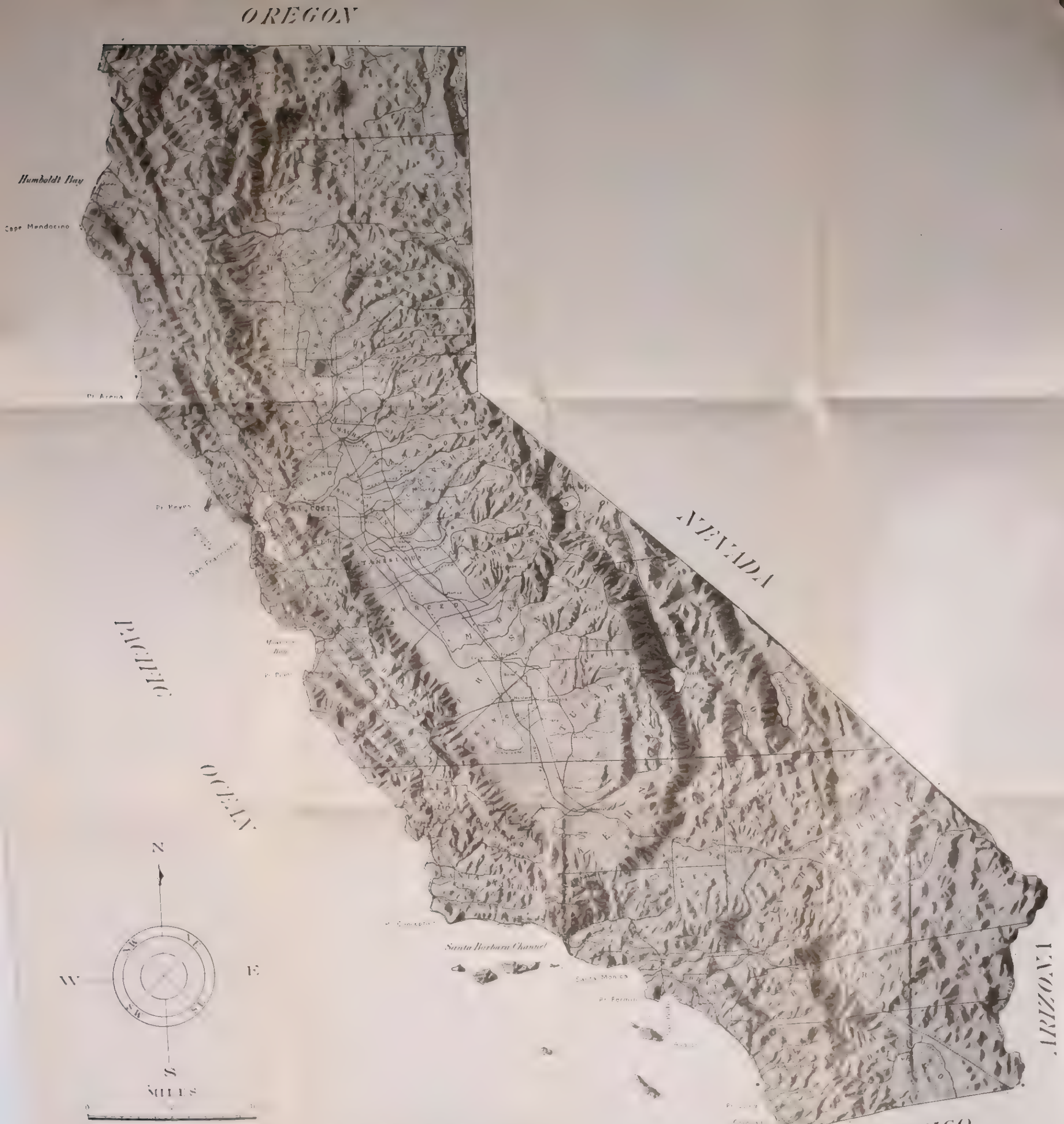


PLATE No. I.

Sketch map of California showing the different sections from which permission to use water has been applied for in over five hundred separate applications submitted to the State Water Commission during little over a year and a half, since its organization in March, 1915, or until December 1, 1916.



RELIEF MAP SHOWING WATER SHEDS AND MAIN STREAM SYSTEMS

CALIFORNIA STATE WATER COMMISSION

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SUMMARY.

Number of applications received to December 1, 1916		531
Number of permits granted		192
Number of applications withdrawn		39
Number of applications rejected		50
Number of applications pending		250
Number of second-feet applied for:		
For agricultural		91,360 second-feet or 93 per cent
For power		4,892 second-feet or 5 per cent
For mining		1,632 second-feet or 1.7 per cent
For muniicpal		257 second-feet or .3 per cent
Of the permits granted there were:		
For agricultural		162
For mining		23
For power		7
Number of licenses issued		4
For agricultural	3	
For power	1	

LETTER OF TRANSMITTAL.

San Francisco, California.

To His Excellency, The Governor,
State of California.

Sir: We have the honor to herewith submit a report of the labors of this commission under the terms of the Water Commission Act (Statutes 1913, chapter 586), approved by your Excellency June 16, 1913, subjected to referendum, approved by popular vote November 3, 1914, and put into effect December 19, 1914. This report covers a period from March 1, 1915, to December 1, 1916.

Respectfully submitted this 20th day of December, 1916.

STATE WATER COMMISSION,
W. A. Johnstone, *President.*

Josephine A. Patten, *Secretary.*

ECONOMICAL USE.

''Along with the question of greater aid to settlers on California irrigation projects the economical use of irrigation water is coming to overshadow other irrigation problems in the state. Our studies of irrigation resources have indicated that there is sufficient irrigation water in California for less than one-half of the area which needs water or that will be greatly benefited by it. Even the irrigation of the 9,000,000 acres which it is estimated may ultimately be watered can be brought about only by the establishment of more economical standards of use than now prevail in many parts of the state. It is believed that the work of the State Water Commission can be of tremendous force in establishing a more economical irrigation practice, especially in northern and central California.''—(Bulletin No. 1—State Department of Engineering Progress Report of Cooperative Irrigation Investigations in California, 1912–1914.)

PLATE I.

Where supply originates—snowfields of California, showing Round Lake from Fall Creek Mountain.

Hetch Hetchy Valley, site of proposed reservoir for San Francisco water supply.

INTRODUCTION

The movement for businesslike legislation regarding the use of water is an old one in California. The office of state engineer was established in 1878 for "the acquirement of data upon which the state might formulate a policy and frame legislation respecting irrigation matters." Although the office continued for ten years and assembled much valuable data, it was unsuccessful in securing the desired legislation.

In 1900 the California Water and Forest Association, in cooperation with irrigation investigations of the United States Department of Agriculture, made a study of water right conditions on eight typical California streams, and in 1902 prepared a draft of a "water code" for submission to the legislature of 1903. The proposed bill was so little understood that the resulting opposition was too great to allow its introduction.

The State Conservation Commission was created on April 8, 1911, as an investigating body. At the same time the State Board of Control (water power) was created. On March 23, 1912, California's first State Water Commission took over the State Board of Control in so far as it related to the filing of applications to appropriate the use of water for power purposes. The act creating the State Board of Control (water power) and that creating the original State Water Commission were identical, with the exception that the term of license was extended from 25 to 40 years. Due to the efforts of the State Conservation Commission, the present water commission act was passed by the legislature in 1913. This gave the new commission, among other things, the authority to accept applications for the use of water for all purposes, the old commission having had authority for use of water for power purposes only. It also gave the commission wider powers, greatly increased the scope of water regulation generally, as may be seen by a perusal of the act, which appears elsewhere in this report.

This new act was suspended in its operation by a referendum petition, but in November, 1913, it was approved by a vote of the people at a general election and went into effect December 19, 1914. The commissioners were appointed in March, 1915, the work of the commission dating from that time. It was a new procedure to those who knew only of the old method of filing on water by posting notices on the stream and recording same in the county recorder's office.

The work of formulating the various blanks and forms, framing rules and regulations and systematizing the work required a great amount of labor. Today there is installed in the offices of the commission a thorough system of taking care of the business with speed and accuracy.

A large amount of data has been acquired, including all the filings on streams in the state from the time the first records were kept in the early history of California. These have been obtained by the commission from the books of the various county recorders. Herein lies one of the values of the new law, in that now all filings and applications for water are centralized in one office, instead of being scattered throughout every county of the state, making it possible to refer to them with much greater facility. Card systems, filing cabinets, loose-leaf books, maps, instruments, a comprehensive library, and many other valuable acquisitions have been accumulated, as a part of the work of the commission in its brief period of existence. Starting with practically nothing at all, and with little foundation to work from, and with such a complex subject to deal with, much of the work has naturally had to be that of organization of this class. This had to be done while progressing with the immediate work at hand, namely, the consideration of the applications submitted to the commission.

To December 1, 1916, there have been 531 applications submitted for the use of water for the purposes allowed by the act, viz: agricultural, power, mining and municipal. The routine of handling, alone, and the disposition of these applications in their various stages of progress through the office of the commission, requires a great amount of labor. Many of them have to be handled over and over again, due to many different causes such as errors, lack of knowledge on the part of applicants, incomplete information, or legal complications. Out of this number of applications 192 permits have been granted, and 89 were rejected or withdrawn. The remainder are in various stages of consideration. In this report will be found the applications submitted to the commission since its organization, arranged by counties, giving the names of applicants, sources of appropriation, amounts, number of acres to be irrigated, horsepower to be developed, character of mines operated, storage, estimated cost of each project where given, and status of the matter before the commission, and also permits granted.

The loyal support of all the various employees of this commission has been a great aid in its work. Regularity in hours, with little regard for the clock when anything was to be done, painstaking and cheerful in all their endeavors, those affiliated with the Water Commission have shown by their daily lives that a ''job with the state,'' when honestly discharged, can be as diligently and efficiently performed as work for a private concern.

FINANCIAL STATEMENT.

The following statement shows the expenditures of money made by the commission, and allotments made to federal departments in cooperation work. The expenditures of the commission cover a period of seventeen months—from July 1, 1915, to December 1, 1916. The allotments cover a period from July 1, 1915, to July 1, 1917:

Commissioners' salaries	$21,250 00
Employees' salaries	25,630 68
General office expense, including rent, furniture, supplies, postage, printing, etc.	7,261 20
Field work—including travel of commissioners and employees, and employment of minor field assistants	7,256 01
Federal departments—	
United States Geological Survey, stream measurements	10,000 00
United States Department of Agriculture	1,700 00
	$83,097 89

The filing fees received during the seventeen-month period, including annual license fees for licenses issued under chapter 41, amount to $14,784.73. These moneys have been transmitted to the State Controller and deposited in the state treasury to the credit of the general fund of the state, in accordance with the requirements of the act creating this commission.

SECTION 20

The Section Which Appears as a Clause in Every Application and Subject to Which All Permits and Licenses Are Granted by the Water Commission.

It is understood and agreed that this application and the permit and license which may be granted hereunder shall be subject to all the conditions set forth in section 20 of the Water Commission Act (Statutes 1913, chapter 586), which is as follows:

> SEC. 20. All permits and licenses for the appropriation of water shall be under the terms and conditions of this act, and shall be effective for such time as the water actually appropriated under such permits and licenses shall actually be used for the useful and beneficial purpose for which said water was appropriated, but no longer; and every such permit or license shall include the enumeration of conditions therein which in substance shall include all of the provisions of this section and likewise the statement that any appropriator of water, to whom said permit or license may be issued, shall take the same subject to such conditions as therein expressed; *provided*, that if, at any time after the expiration of twenty years after the granting of a license, the state, or any city, city and county, municipal water district, irrigation district, lighting district, or any political subdivision of the state shall have the right to purchase the works and property occupied and used under said license and the works built or constructed for the enjoyment of the rights granted under said license; and in the event that the said state, city, city and county, municipal water district, irrigation district, lighting district or political subdivision of the state so desiring to purchase and the said owner of said works and property can not agree upon said purchase price, said price shall be determined in such manner as is now or may hereafter be determined in eminent domain proceedings. If it shall appear to the state water commission at any time after a permit or license is issued as in this act provided that the permittee or licensee, or the heirs, successors or assigns of said permittee or licensee, has not put the water granted under said permit or license to the useful or beneficial purpose for which the permit or license was granted, or that the permittee or licensee, or the heirs, successors, or assigns of said permittee or licensee, has ceased to put said water to such useful or beneficial purpose, or that the permittee or licensee, or the heirs, successors or assigns of said permittee or licensee, has failed to observe any of the terms and conditions in the permit or license as issued, then and in that case the said commission, after due notice to the permittee, licensee, or the heirs, successors or assigns of such permittee or licensee, and a hearing thereon, may revoke said permit or license and declare the water to be unappropriated and open to further

appropriation in accordance with the terms of this act. And the findings and declaration of said commission shall be deemed to be prima facie correct until modified or set aside by a court of competent jurisdiction; *provided*, that any action brought so to modify or set aside such finding or declaration must be commenced within thirty days after the service of notice of said revocation on said permittee or licensee, his heirs, successors or assigns. And every licensee or permittee under the provisions of this act if he accept such permit or license shall accept the same under the conditions precedent that no value whatsoever in excess of the actual amount paid to the state therefor shall at any time be assigned to or claimed for any permit or license granted or issued under the provisions of this act, or for any rights granted or acquired under the provisions of this act, in respect to the regulation by any competent public authority of the services or the price of the services to be rendered by any permittee or licensee, his heirs, successors or assigns or by the holder of any rights granted or acquired under the provisions of this act, or in respect to any valuation for purposes of sale to or purchase, whether through condemnation proceedings or otherwise, by the state or any city, city and county, municipal water district, irrigation district, lighting district or any political subdivision of the state, of the rights and property of any permittee or licensee, or the possessor of any rights granted, issued, or acquired under the provisions of this act. The application for a permit by municipalities for the use of water for said municipalities or the inhabitants thereof for domestic purposes shall be considered first in right, irrespective of whether they are first in time; *provided, however*, that such application for a permit or the granting thereafter of permission to any municipality to appropriate waters, shall not authorize the appropriation of any water for other than municipal purposes, and providing further that where permission to appropriate is granted by the state water commission to any municipality for any quantity of water in excess of the existing municipal needs therefor, that pending the application of the entire appropriation permitted, the state water commission shall have the power to issue permits for the temporary appropriation of the excess of such permitted appropriation over and above the quantity being applied from time to time by such municipality; *and provided further*, that in lieu of the granting of such temporary permits for appropriation, the state water commission may authorize such municipality to become as to such surplus a public utility, subject to the jurisdiction and control of the railroad commission of the state of California for such period or periods from and after the date of the issuance of such permission to appropriate, as may be allowed for the application to municipal uses of the entire appropriation permitted; *and provided, further*, that when such municipality shall desire to use the additional water granted in its said application it may so do upon making just compensation for the facilities for taking, conveying and storing such additional water rendered valueless for said purposes, to the person, firm or corporation which constructed said facilities for the temporary use of said excess waters, and which compensation, if not agreed upon between the municipality and said person, firm or corporation, may be determined in the manner provided by law for determining the value of property taken by and through eminent domain proceedings.

EARLIER EFFORTS IN WATER LEGISLATION.

Experience in Arriving at the Present Conditions in Water Appropriation.

Two different systems of water rights are recognized in California—the riparian right and the prior appropriation right. The former is the one belonging to land bordering upon a stream. It is the common law right of England. As modified by the California Supreme Court, the riparian right entitled its owner to a reasonable use of the waters of the stream upon the land riparian thereto. It is recognized as the paramount right in California—the appropriator being entitled to the surplus only.

The right of prior appropriation is an outgrowth of the mining period. First public land was appropriated for its mineral wealth and later the waters of streams upon the public domain were diverted for use in connection with mining. As the mineral claims were marked by monuments and notices, so the custom grew of posting notices regarding water claims. This new doctrine of prior appropriation was early treated by the California courts and during the fifties and sixties the principles now recognized as basic were crystallized.

In 1872 a statute was adopted regarding the appropriation of water which was simply declaratory of the principles laid down by the courts. The sections of this statute (sections 1410 to 1422 of the Civil Code) continued as the only legislation upon the subject until the adoption of the present water commission act. The statute provided for the posting of a notice of appropriation stating the source of supply, the amount of water claimed, the means of diversion and the purpose and place of use. After posting, the notice had to be recorded in the office of county recorder and work on the diversion had to be commenced within sixty days and continued with reasonable diligence to completion. If the various steps were taken in accordance with the statute the right dated from the posting of the notice.

As the other western states were occupied and the necessity of diverting water arose, statutes similar to the California act of 1872 were adopted. The looseness of such a system when applied to so valuable a resource as the water supply first impressed Wyoming, where, in 1890, the present type of ''modern water legislation'' was enacted. The office of the state engineer was created and made the central office of record for water rights. The old method of posting notices was abandoned, and one wishing to appropriate water made application, on a printed form furnished by the state, to the state engineer. If there was unappropriated water in the source of supply, the state engineer approved the application, which then became the permit, and in his approval fixed the time for beginning work, the time for completing work and the time for applying the water appropriated to beneficial use. Upon completion of the work and application to beneficial use to the satisfaction of the state engineer, a water right certificate was issued fixing the right of the appropriator as of the date of filing the application.

The appropriation was, therefore, under the supervision of the state engineer from start to finish. Wyoming accordingly has a definite official record of every appropriation of water made since 1891—that is, throughout its whole existence as a state. California, on the other hand, has tens of thousands of water claims in its county records, but nothing worth while can be ascertained regarding the status of such claims without a field inspection of the water courses.

The Wyoming system was adopted by Nebraska in 1895, by Utah and Idaho in 1903, by Nevada, North Dakota, Oklahoma and South Dakota in 1905, by New Mexico in 1907, by Oregon in 1909, by California for power purposes only in 1911, and by California for all purposes and by Texas in 1913. The California act, however, was withheld by referendum and became effective December 19, 1914.

The new California legislation contains one feature regarding new appropriations not contained in the legislation of any other western state, and that is the provision for the noncapitalization of water rights. The attitude of the state is that one should be allowed to appropriate water and divert it as long as he can apply it to beneficial use, but that he should not be allowed to capitalize such right for rate fixing purposes, or for purposes of sale to a political unit.

As stated above, the California statute of 1872 provided only for the initiation of the appropriation. There was no legislation regarding court procedure in water right litigation. The result was that actions in connection with water rights had to be brought in the same way as all other real property actions. On many streams several actions have been brought without all of the rights being determined—that is, "A" could sue "B," "B" sue "D," "C" sue "A" and so on to the limit of the combination of the single diversions. The folly of this lack of system so early appealed to Colorado that by its statutes of 1879–1881 a special court procedure was adopted, so that all the claims to the use of water from a single source of supply within a designated water district could be adjudicated in a single action. This method was improved upon by Wyoming in 1890–1891 by giving to the Board of Control, composed of the state engineer and the four superintendents of the divisions into which the state was divided, the authority to determine existing rights upon stream systems. This so-called administrative method was an innovation in the determination of real property rights, but was upheld by the Wyoming Supreme Court. Nebraska in 1895 and Nevada in 1903 adopted a similar system.

Idaho and Utah in 1903, North Dakota, Oklahoma and South Dakota in 1905, and New Mexico in 1907 adopted statutes providing for a special court procedure, so that all the claims to water from a single source of supply might be adjudicated in one proceeding after the necessary physical data had been assembled by the state engineer. These states adopted the "court procedure" rather than the "administrative procedure" for the reason that they believed the "administrative procedure" would be held invalid by their supreme courts. Oregon in 1909 adopted a combination of the two procedures. It followed Wyoming so far as the determination by the Board of Control is concerned, but provided that the determination should be immediately submitted to the Circuit Court for confirmation or modification in a comparatively simple proceeding.

As stated above, the Wyoming "administrative method" was upheld by the Wyoming Supreme Court. It was, likewise, upheld in Nebraska, but not in Nevada, where, as in a recent case the Supreme Court expressed itself against the method as a conclusive one, the statute was modified in order to follow the new Oregon method. The Supreme Courts of Idaho and South Dakota have declared their statutes along this line invalid in many respects. It is gratifying, therefore, to know that the United States Supreme Court has recently upheld the validity of the Oregon method. With this strong endorsement it is certain that the method will be adopted in other states than Oregon and Nevada. Under the water commission act in California the procedure for the determination of rights is similar to the Oregon method, with the exception that after the determination by the commission an action in the courts must be initiated in the regular way, instead of as in Oregon going to the court directly for confirmation or modification. The California commission proposes to secure an amendment at the next session of the legislature making the California system identical with the Oregon system in this respect.

Even in those few cases in California where all the rights upon a stream were adjudicated in a single action, there was no method recognized by statute for placing an officer upon the stream to divide the waters in accordance with the decree. The result was that either force had to be resorted to, or an action for contempt proceedings had to be initiated in case any one of the litigants failed to abide by the decree. The Colorado statutes of 1879–1881 provided a splendid system for the appointment of water commissioners or water masters to divide the water in accordance with the decree of the court under the special procedure. This method has been adopted in all of the states enumerated above with the exception of Texas and California, and it is proposed to ask for legislation adopting it in California at the next session.

From the above it may be seen that there are three main points to be covered in water legislation:

First (in the order of presentation above)—The control of new appropriations.

Second—The determination or adjudication of existing rights.

Third—The division of water among those entitled to its use.

The third is the real goal to be sought, and the other two are merely incidental thereto. As shown, the modern legislation has been adopted in all of the western states with the exception of Washington, Montana, Kansas and Arizona. It is based upon simple business principles, and, although there may have been objections to its introduction due to lack of knowledge of its scope, such objections have always disappeared after the statutes have become operative.

THE CALIFORNIA WATER COMMISSION ACT.

CHAPTER 586.

An act to regulate the use of water which is subject to such control by the state of California, and in that behalf creating a state water commission; specifying and providing for the appointment of the members of said commission; fixing the terms of office and compensation of the members of said commission; fixing the powers, duties and authority of said commission and its members; providing for the filling of vacancies in the membership of said commission; providing for the removal from office of the appointed members of said commission; providing for the cooperation of courts with said commission; providing that certain courts shall take judicial notice of certain acts of the state water commission; specifying the duties of all persons summoned as witnesses before said commission or any of its members; appropriating money for carrying out the provisions of this act; providing for the payment of the indebtedness and expenses of said commission, its members and employees; declaring what water is unappropriated; providing for the utilization of water and the works necessary to such utilization to the full capacity of streams or of such portion or portions of such capacity as the public good many require; declaring what water may be appropriated; declaring that the nonapplication for ten consecutive years of any portion of the waters of any stream to lands riparian to such stream shall be conclusive presumption that the use of such nonapplied water is not needed on said riparian lands for a useful or beneficial purpose; declaring that such nonapplied water shall be deemed to be in the use of the state and subject to appropriation; declaring the duties of those who desire to appropriate water; declaring the periods for which water may be appropriated and the conditions under which water may be appropriated; providing for the payment of fees and charges by the applicants for permission to appropriate water and by the appropriators of water; providing for the ascertainment and adjudication of water rights; providing for the bringing of actions by certain persons, or, upon the direction of the state water commission, by the attorney general, for the quieting of title to water rights; specifying certain duties of the claimants, possessors or users of water or water rights; declaring water rights forfeited under certain conditions; regulating the appropriation of water; excepting cities, cities and counties, municipal water districts, irrigation districts and lighting districts from certain provisions of this act; defining certain words and terms used in this act; repealing all acts or parts of acts in conflict with this act; declaring how this act shall be known; making legislative declaration concerning those parts of this act which may not be declared unconstitutional.

[Approved June 16, 1913.]

The people of the state of California do enact as follows:

SECTION 1. For the purpose of carrying out the provisions of this act a state water commission consisting of five persons is hereby created and established. Two members of said commission shall be, ex officio, the governor of the state and the state engineer, respectively. Three members of said commission shall be appointed by the governor for the term of four years; *provided, however,* that of the members first appointed one shall be appointed to hold office until the first day in January, nineteen hundred and fourteen, one until the first day in January, nineteen hundred and fifteen, and one until the first day in January, nineteen hundred and sixteen. Such appointive commissioners shall be men of practical knowledge or experience in the application and use of waters for irrigation, mining and municipal purposes, and shall be so appointed that at least one thereof shall have had practical knowledge and experience in the use of water for agricultural purposes, and one thereof shall have had practical knowledge and experience in the use of water for mining purposes, and one thereof shall have had practical knowledge and experience in the use of water for municipal purposes. The commissioners shall elect one of their number president of the commission. The appointed members of said commission shall each receive as compensation for his services the sum of five thousand dollars per annum. No commissioner who is directly or indirectly interested in any matter before the commission shall sit with the commission during the hearing of such matter; nor shall he be detailed by the commission to investigate or report on any such matter; nor shall he take part in any determination of any such matter. But the governor shall have the power and authority, upon request of the commission, to appoint *pro tempore* some disinterested person to sit and act in the place and stead of such interested commissioner. Such *pro tempore* commissioner shall have compensation for the time of service equal to the compensation of a commissioner during such service and shall have the power and authority of the same, only in the matter for the investigation and determination of which he shall have been appointed and his connection with the commission shall cease and determine upon the completion of the investigation and determination for which he was appointed. But the commissioner in whose place and stead he sits shall have power, compensation and authority in all other cases.

Sec. 2. Whenever a vacancy in the state water commission shall occur, the governor shall forthwith appoint a qualified person to fill the same for the unexpired term. The legislature, by a two-thirds vote of all members elected to each house, or the governor, may remove any one or more of the appointed commissioners from office. The commission shall have a seal bearing the following inscription: State water commission of California. The seal shall be affixed to all authentications of copies of records and to such other instruments as the commission may direct. All courts shall take judicial notice of said seal.

Sec. 3. A majority of the appointed commissioners shall constitute a quorum for the transaction of any business, for the performance of any duty, or for the exercise of any power of the commission. No vacancy in the commission shall impair the right of the remaining commissioners to exercise all the powers of the commission. The act of a majority of the commissioners present, when in session as a board, shall be deemed to be the act of the commission; but any investigations, inquiry or hearing which the commission has power to undertake or hold may be undertaken or held by or before any commissioners or commissioner designated for the purpose by the commission; and every finding, order, ascertainment or decision made by the commissioners or the commissioner so designated pursuant to such investigation, inquiry or hearing, when approved by the commission and ordered filed in its office, shall be and be deemed to be the finding, order, ascertainment or decision of the commission.

Sec. 4. (*a*) Each commissioner shall have power to administer oaths, certify to all official acts, and to issue subpœnas for the attendance of witnesses and the production of papers, books, maps, accounts, documents and testimony in any inquiry, investigation, hearing, ascertainment or proceeding ordered or undertaken by the commission in any part of the state. Each witness who shall appear by order of the commission or any commissioners or a commissioner shall receive for his attendance the same fees and mileage allowed by law to witnesses in civil cases, which amount shall be paid by the party at whose request such witness is subpœnaed. When any witness who has not been required to attend at the request of any party shall be subpœnaed by the commission his fees and mileage shall be paid from the funds appropriated for the use of the commission in the same manner as other expenses of the commission are paid. Any witness subpœnaed, except one whose fees and mileage may be paid from the funds of the commission, may, at the time of service, demand the fee to which he is entitled for travel to and from the place at which he is required to appear and one day's attendance. If such witness demands such fees at the time of service, and they are not at that time paid or tendered, he shall not be required to attend before the commission or commissioners as directed in the subpœna. All fees and mileage to which any witness is entitled under the provisions of this section may be collected by action therefor instituted by the person to whom such fees are payable. But no witness shall be compelled to attend as a witness before the water commission or any water commissioner or water commissioners out of the county in which he resides, unless the distance be less than thirty miles from his place of residence to the place of hearing.

(*b*) The superior court of the county or city and county in which any inquiry, investigation, hearing or proceedings may be held by the commission or any commissioner or commissioners shall have the power to compel the attendance of witnesses and the production of papers, maps, books, accounts, documents and testimony as required by any subpœna issued by the commission or any commissioner or commissioners. The commission, commissioners or commissioner before whom the testimony is to be given or produced may, in case of the refusal of any witness to attend or testify or produce any papers, maps, books, accounts or documents required by such subpœna, report to the superior court in and for the county or city and county in which the proceeding is pending by petition, setting forth that due notice has been given of the time and place of attendance of said witness, or for the production of said papers, maps, books, accounts or documents and that the witness has been summoned in the manner prescribed in this act, and that the witness has failed and refused to attend or produce the papers, maps, books, accounts or documents required by the subpœna before the commission, commissioners, or commissioner in the cause or proceeding named in the notice and subpœna, or has refused to answer questions propounded to him in the course of such cause or proceeding, and ask an order of said court, compelling the witness to attend, testify, and produce said papers, maps, books, accounts or documents before the commission, or commissioners, or commissioner. The court, upon the petition of the commission or commissioners or commissioner, shall enter an order directing the witness to appear before the court at a time and place to be fixed by the court in such order, the time to be not more than ten days from the date of the order, and then and there show cause, if any he have, why he refused to obey said subpœna, or refused to answer questions propounded to him by said commission, or any commissioners or any commissioner, or neglected, failed or refused to produce before said commission, or any commissioners or any commissioner the books, papers, maps, accounts or documents called for in said subpœna. A copy of said order and the petition therefor shall be served upon said witness. If it shall appear to the court that said subpœna was regularly issued by the commission or any commissioners or a commissioner, the court shall thereupon enter an order that said witness appear before the commission or commissioners or commissioner at the time and place fixed in said order, and testify or produce the required papers, maps, books, accounts or documents, or both testify and produce; and upon failure to obey said order said witness shall be dealt with as for contempt of court.

(*c*) The state water commission or any commissioners or commissioner, or any party to a proceeding before the commission or any commissioners or any commissioner, may in any investigation or hearing before the commission or any commissioners or any commissioner cause the deposition of witnesses residing within or without the state to be taken in the manner prescribed by law for depositions in civil actions in the superior courts of this state.

(*d*) No person shall be excused from testifying or from producing any book, map, document, paper or account in any investigation or inquiry by or hearing before the commission or any commissioners or commissioner upon the ground that the testimony or evidence, book, map, document, paper or account required of him may tend to incriminate him or subject him to penalty or forfeiture. But no person shall be prosecuted, punished or subjected to any penalty or forfeiture for or on account of any act, transaction, matter or thing material to the matter under investigation by said commission, or any commissioners, or any commissioner concerning which he shall have been compelled to testify or to produce documentary evidence; *provided,* that no person so testifying or producing shall be exempt from prosecution and punishment for any perjury committed by him in his testimony.

SEC. 5. A full and accurate record of business or acts performed or of testimony taken by the commission or any member or members thereof in pursuance of the provisions of this act shall be kept and be placed on file in the office of said water commission.

SEC. 6. The state water commission shall take, charge and collect the following fees: for copies and records not required to be certified or otherwise authenticated by the commission, ten cents for each folio; for certified copies of official documents and orders filed in its office, fifteen cents for each folio, and one dollar for every certificate under seal affixed thereto; for certified copies of evidence and proceedings before the commission, fifteen cents for each folio. The commission may fix reasonable charges for publications issued under its authority. All fees charged and collected under this section shall be paid, at least once each week, accompanied by a detailed statement thereof, into the treasury of the state.

Sec. 7. For the purpose of carrying out the provisions of this act the state water commission is authorized to pass such necessary rules and regulations as it may from time to time deem advisable, and to appoint and remove at its pleasure a secretary who shall have charge of its books and records and perform such other duties as from time to time may be prescribed and whose salary shall be fixed by the water commission; and the state water commission may also employ such expert, technical and clerical assistance, and upon such terms as it may deem proper.

Sec. 8. For the purpose of carrying out the provisions of this act the sum of fifty thousand dollars is hereby appropriated for the fiscal years 1913–1914 and 1914–1915 out of any money in the state treasury not otherwise appropriated; and the state controller is hereby authorized and directed to draw warrants upon such sum from time to time upon the requisition of the state water commission approved by the state board of control, and the state treasurer is hereby authorized and directed to pay such warrants.

Sec. 9. All indebtedness incurred for salaries, and all necessary costs in traveling and other expenses of said commission, and each of its members and persons employed by it, while actually engaged in the business of said commission, shall be paid by the state out of the funds hereby appropriated, upon the sworn statement of the person or persons incurring such indebtedness, and upon the requisition of the state water commission, approved by the state board of control, and the state controller is hereby authorized to draw warrants upon the state treasurer for said indebtedness, salaries, costs and expenses, as provided by law for the payment of similar costs and expenses and the drawing of similar warrants.

Sec. 10. The state water commission is hereby authorized and empowered to investigate for the purpose of this act all streams, stream systems, portions of stream systems, lakes, or other bodies of water, and to take testimony in regard to the rights to water or the use of water thereon or therein, and to ascertain whether or not such water, or any portion thereof, or the use of said water or any portion thereof, heretofore filed upon or attempted to be appropriated by any person, firm, association, or corporation, is appropriated under the laws of this state.

Sec. 11. All water or the use of water which has never been appropriated, or which has been heretofore appropriated and which has not been in process, from the date of the initial act of appropriation, of being put, with due diligence in proportion to the magnitude of the work necessary properly to utilize for the purpose of such appropriation such water or the use of water, or which has not been put, or which has ceased to be put to some useful or beneficial purpose, or which may hereafter be appropriated and cease to be put, to the useful or beneficial purpose for which it was appropriated, or which in the future may be appropriated and not be, in the process of being put, from the date of the initial act of appropriation, to the useful or beneficial purpose for which it was appropriated, with due diligence in proportion to the magnitude of the work necessary properly to utilize for the purpose of such appropriation such water or the use of water, is hereby declared to be unappropriated. And all waters flowing in any river, stream, canyon, ravine or other natural channel, excepting so far as such waters have been or are being applied to useful and beneficial purpose upon, or in so far as such waters are or may be reasonably needed for useful, and beneficial purposes upon lands riparian thereto, or otherwise appropriated, is and are hereby declared to be public waters of the state of California and subject to appropriation in accordance with the provisions of this act. If any portion of the waters of any stream shall not be put to a useful or beneficial purpose to or upon lands riparian to such stream for any continuous period of ten consecutive years after the passage of this act, such nonapplication shall be deemed to be conclusive presumption that the use of such portions of the waters of such stream is not needed upon said riparian lands for any useful or beneficial purpose; and such portion of the waters of any stream so nonapplied, unless otherwise appropriated for a useful and beneficial purpose, is hereby declared to be in the use of the state and subject to appropriation in accordance with the provisions of this act. In any case where a reservoir or reservoirs have been or shall hereafter under the provisions of this act be constructed or surveyed, laid out and proposed to be constructed for the storage of water for a system, which water is to be used at one or more points under appropriations of water heretofore or hereafter made, which appropriations and rights thereunder are now, or shall hereafter be held and owned by the person or corporation owning such reservoir site or sites and constructing such reservoir or reservoirs, such reservoir or reservoirs and appropriations and rights shall, in the discretion of the state water commission, constitute a single enterprise and unit, and work of constructing such reservoir or reservoirs, or any of them, or work on any one of such appropriations shall, in the discretion of said commission, be sufficient to maintain and preserve all such applications for appropriations and rights thereunder.

Sec. 12. The state water commission shall have authority to, and may, for good cause shown, upon the application of any appropriator or user of water under an appropriation made and maintained according to law prior to the passage of this act, prescribe the time within which the full amount of the water appropriated shall be applied to a useful or beneficial purpose; *provided*, that said appropriator or user shall have proceeded, with due diligence in proportion to the magnitude of the project, to carry on the work necessary to put the water to a beneficial use; and in determining said time said commission shall grant a reasonable time after the construction of the works or canal or ditch or conduits or storage system used for the diversion, conveyance or storage of water; and in doing so said commission shall also take into consideration the cost of the application of such water to the useful or beneficial purpose, the good faith of the appropriator, the market for water or power to be supplied, the present demand therefor, and the income or use that may be required to provide fair and reasonable returns upon the investment and any other facts or matters pertinent to the inquiry. Upon prescribing such time the state water commission shall issue a certificate showing its determination of the matter. For good cause shown, the state water commission may extend the time by granting further certificates. And, for the time so prescribed or extended, the said appropriator or user shall be deemed to be putting said water to a beneficial use.

And if at any time it shall appear to the state water commission, after a hearing of the parties interested and an investigation, that the full capacity of the works built or constructed, or being built or constructed, under an appropriation of water or the use thereof made under the provisions of this act has not developed or can not develop the full capacity of the stream at the point where said works have been or are being built or constructed, and that the holder of the said appropriation will not or can not, within a period deemed to be reasonable by the commission, develop the said stream at said point to such a capacity as the commission deems to be required by the public good, then and in that case the said commission, in its discretion, may permit the joint occupancy and use, with the holder of the appropriation, to the extent necessary to develop the stream to its full capacity or to such portion of said capacity as may appear to the state water commission to be advisable, by any and all persons, firms, associations, or corporations applying therefor, of any dam, tunnel, diversion works, ditch, or other works or constructions already built or constructed or in process of being built or constructed under this act; *provided*, that said commission shall take into consideration the reasonable cost of the original and new work, the good faith of the applicant, the market for water or power to be supplied by the original and the new work, and the income or use that may be required to provide fair and reasonable returns upon such cost; *provided, further*, that the applicant or applicants shall be required to pay to the party or parties owning said dam, tunnel, diversion works, ditch, or other works or constructions a pro rata portion of the total cost of the old and the new works, said pro rata portion to be based upon the proportion of the water used by the original and the subsequent users of said dam, tunnel, diversion works, ditch, or other works or constructions, if the water is used or to be used for irrigation or domestic purposes; or, if the water is used or to be used for the generation of electricity or electrical or other power, the said pro rata portion shall be based upon the relative amount of electricity or electrical or other power capable of being developed by the original and the new works; or, if a portion of the water utilized under a joint occupancy of any dam, tunnel, diversion works, ditch or other works or construction, shall be used for the purpose of irrigation and another portion of said water shall be used for the generation of electricity or electrical or other power, then and in that case the applicant or applicants for joint occupancy shall be required to pay to the party or parties owning said dam, tunnel, diversion works, ditch, or other works or constructions a pro rata portion of the total cost of the old and new works, said pro rata portion to be based upon the proportion of the relative amount of water used by each joint occupant and the income derived by each said joint occupant from said joint occupancy; or, if any of the waters used under such joint occupancy shall be utilized for purposes other than those specified above, then and in that case the applicant or applicants for such joint occupancy shall be required to pay to the party or parties owning said dam, tunnel, diversion works, ditch, or other works or constructions, such a pro rata portion of the total cost of the old and new works as shall appear to the state water commission to be just and equitable. Said applicant or applicants shall also be required to pay a proper pro rata share, based as above, of the cost of maintaining said dam, tunnel, diversion works, ditch or other works or constructions, on and after beginning the occupancy and use thereof. Furthermore, the state water commission if it appears to the said commission that the full capacity of the works built or constructed, or being built or constructed, under an appropriation of water or the use thereof under this act, will not develop the full capacity of the stream at that point, and it appears to the commission that the public good requires it, and the commission specifically so finds after investigation and hearing of the parties interested, may permit any person, firm, association or corporation to repair, improve, add to, supplement, or enlarge, at his or its proper cost, charge and expense, any dam, tunnel, diversion works, ditch, or other works or constructions already built or constructed or in process of being built or constructed under the provisions of this act, and to use the same jointly with the owners thereof; *provided*, that the said repairing, improving, adding to, supplementing, or enlarging, shall not materially interfere with the proper use thereof by the owner of said dam, tunnel, diversion works, ditch, or other works or constructions or shall not materially injure said dam, tunnel, diversion works, ditch or other works or constructions. And the state water commission shall determine the pro rata and other costs provided for in this section.

Sec. 13. All rights granted or declared by this act shall be ascertained, adjudicated and determined in the manner and by the tribunals as provided in this act.

Sec. 14. This act shall not be held to bestow, except as expressly provided in this act, upon any person, firm, association or corporation, any right where no such right existed prior to the time this act takes effect.

Sec. 15. The state water commission shall allow, under the provisions of this act, the appropriation of unappropriated water or of the use thereof, or of water or of the use thereof which may hereafter cease to be appropriated, or which may hereafter be declared to be unappropriated, or which, having been used under claim of riparian proprietorship or appropriation finds its way back into a stream, lake or other body of water and also such water as is declared under section eleven of this act to be subject to appropriation.

Sec. 16. Every application for a permit to appropriate water shall set forth the name and post-office address of the applicant, the source of water supply, the nature and amount of the proposed use, the location and description of the proposed headworks, ditch, canal and other works; the proposed place of diversion and the place where it is intended to use the water; the time within which it is proposed to begin construction, the time required for completion of the construction, and the time for the complete application of the water to the proposed use. If for agricultural purposes, the application shall, besides the above general requirements, give the legal subdivisions of the land and the acreage to be irrigated, as near as may be; if for power purposes, it shall give, besides the general requirements prescribed above, the nature of the works by means of which the power is to be developed, the head and amount of water to be utilized, and the use to which the power is to be applied; if for storage in a reservoir, it shall give, in addition to the general requirements prescribed above, the height of dam, the capacity of reservoir, and the use to be made of the impounded waters; if for municipal water supply, it shall give, besides the general requirements specified above, the present population to be served, and, as near as may be, the future requirements of the city; if for mining purposes, it shall give, in addition to the general requirements prescribed above, the nature and location of the mines to be served and the methods of supplying and utilizing the water. All applications shall be accompanied by as many copies of such maps, drawings, and other data as may be prescribed or required by the state water commission, and such maps, drawings, and other data shall be considered as part of the application. If any permittee or licensee, or the heirs, successors, or assigns of any permittee or licensee, desire to change the point of diversion from the point of diversion specified in the original application, or after the granting of any permit or license, such change or changes may be made only upon the permission of the state water commission; *provided,* that, before granting such permission, such applicant must establish, to the satisfaction of the state water commission, and such commission must so find, that such change in the place of diversion will not operate to the injury of any other appropriator or legal user of such waters before permitting such change in the place of the diversion. Upon receipt of application for permission to make such change in the place of diversion, the commission shall, by order, fix a time within which any person interested may appear in opposition to such application, and such applicant shall, if the commission so require, cause to be published at least once a week for four consecutive weeks, in a newspaper or newspapers of general circulation in the county in which is situated both the old and new points of diversion, a copy of said order. Proof of such publication shall be by affidavit of the publisher of such newspaper. Should any objection be made to the change in point of diversion so applied for, the state water commission shall fix a time for the hearing of said application and of the objections thereto, which time shall be not less than thirty days nor more than sixty days after the period of said publication, and upon such hearing the said commission shall grant or refuse, as the facts shall warrant, such permission to change place of diversion.

Sec. 17. Any person, firm, association or corporation may apply for and secure from the state water commission, in conformity with this act and in conformity with reasonable rules and regulations adopted from time to time by the state water commission, a permit for any unappropriated water or for water which having been appropriated or used flows back into a stream, lake or other body of water within this state. And any application so made shall give to the applicant a priority of right as of the date of said application to such water or the use thereof until such application shall have been approved or rejected by said commission; *provided,* that such priority shall continue only so long as the provisions of law and the rules and regulations of the water commission shall be followed by the applicant. Upon the approval of any application by the commission, said approval shall give priority of right as of the date of said application, and shall give the right to take and use the amount of water specified in said approval until the issuance by the state water commission of a license for the use of said amount of water, or until the said commission refuses to issue said license. But the approval of any application shall give the right to take and use water only to the extent and for the purpose allowed in said approval; *provided*, that any defective application made in a bona fide attempt to conform to the rules and regulations of the state water commission and to the law shall secure to the applicant a priority of right as of the date of said application until he shall have been notified by said commission in what respect his application is defective. And said applicant shall be allowed sixty days after notice of said defect in which to file an amended and perfected application. If, within said sixty days, said applicant shall not file an amended and perfected application, said priority of right shall cease and determine, unless for good cause shown the state water commission shall allow said applicant to file a further amended and perfected application; *provided, also*, that any priority of right secured under this section shall not be effective for more than thirty days after service of notice of such approval, personally or by registered mail, on the applicant, unless within said period of thirty days a true copy of said approval upon which such priority is based shall have been filed in the office of the recorder of the county or city and county in which the water is to be diverted, and, within ten days thereafter, a certificate of such filing by the county recorder is also filed with the state water commission.

Sec. 18. Actual construction work upon any project shall begin within such time after the date of the approval of the application as shall be specified in said approval which time shall not be less than sixty days from date of said approval, and the construction of the work thereafter shall be prosecuted with due diligence in accordance with this act, the terms of the approved application, and the rules and regulations of said commission; and said work shall be completed in accordance with law, the rules and regulations of the state water commission, and the terms of the approved application and within a period specified in the permit; but the period of completion specified in the permit may, for good cause shown, be extended by the state water commission. And if such work be not so commenced, prosecuted and completed, the water commission shall, after notice in writing and mailed in a sealed, postage-prepaid and registered letter addressed to the applicant at the address given in his application for a permit to appropriate water, and a hearing before the commission revoke its approval of the application. But any applicant, the approval of whose application shall have been thus revoked, shall have the right to bring an action in the superior court of the county in which is situated the point of proposed diversion of the water for a review of the order of the commission revoking said approval of the application. And thirty days after the revocation of said permit all rights of the said permittee under said permit shall cease and lapse, unless said permittee shall within said thirty days after said revocation bring an action in the superior court for a review of the order of revocation. The priority of right of any permittee so bringing an action shall continue under said permit until a final judgment is rendered as to the reasonableness of the revocation of said permit. But until and unless the revocation of the permit shall be finally decreed by such court, the permittee shall not take or use any of the water the right to take and use which is granted by said permit.

Sec. 19. Immediately upon completion, in accordance with law, the rules and regulations of the state water commission, and the terms of the permit, of the project under such application, the holder of a permit for the right to appropriate water shall report said completion to the state water commission. The said commission shall immediately thereafter cause to be made a full inspection and examination of the works constructed and shall determine whether the construction of said works is in conformity with law, the terms of the approved application, the rules and regulations of the state water commission, and the permit. The said water commission shall, if said determination is favorable to the applicant, issue a license which shall give the right to the diversion of such an amount of water and to the use thereof as may be necessary to fulfill the purpose of the approved application. Said license shall be in such form as may be prescribed by the state water commission under the provisions of this act. But if the said commission shall find, upon inspection and examination of the works constructed, that the construction and condition of said works are not in conformity with the law, the rules and regulations of the state water commission, the terms of the approved application and the terms of the permit, then and in that case the said commission may, after due notice in writing and in the manner provided in sections one thousand and eleven, one thousand and twelve, and one thousand and thirteen of the Code of Civil Procedure to the applicant or the holder of the permit, and a public hearing thereon, refuse to issue said license. And thirty days after the refusal of said commission to issue said license all rights of the applicant and the holder of the permit under said application and permit shall lapse and cease. But the holder of any permit to whom the said water commission may have refused to issue said license, shall have the right to bring an action within thirty days after the said refusal, in the superior court to review said order and to obtain a decree requiring the issuance of such license. And the rights of the holder of any permit so bringing an action shall continue under said permit until the decree in such action has been entered and become final. But until the refusal of the commission to issue said license shall be finally determined by the courts, the permittee shall not take or use any of the water, the taking and using of which is granted to him by said permit. And if the holder of any permit which has been revoked by the state water commission shall not bring an action within said thirty days in the superior court to determine the validity of said revocation, then and in that case all rights of the applicant and of the holder of said permit shall lapse and cease.

Sec. 20. All permits and licenses for the appropriation of water shall be under the terms and conditions of this act, and shall be effective for such time as the water actually appropriated under such permits and licenses shall actually be used for the useful and beneficial purpose for which said water was appropriated, but no longer; and every such permit or license shall include the enumeration of conditions therein which in substance shall include all of the provisions of this section and likewise the statement that any appropriator of water, to whom said permit or license may be issued, shall take the same subject to such conditions as therein expressed; *provided*, that if, at any time after the expiration of twenty years after the granting of a license, the state, or any city, city and county, municipal water district, irrigation district, lighting district, or any political subdivision of the state shall have the right to purchase the works and property occupied and used under said license and the works built or constructed for the enjoyment of the rights granted under said license; and in the event that the said state, city, city and county, municipal water district, irrigation district, lighting district, or political subdivision of the state so desiring to purchase and the said owner of said works and property can not agree upon said purchase price, said price shall be determined in such manner as is now or may hereafter be determined in eminent domain proceedings. If it shall appear to the state water commission at any time after a permit or license is issued as in this act provided that the permittee or licensee, or the heirs, successors, or assigns of said permittee or licensee, has not put the water granted under said permit or license to the useful or beneficial purpose for which the permit or license was granted, or that the permittee or licensee, or the heirs, successors, or assigns of said permittee or licensee, has ceased to put said water to such useful or beneficial purpose, or that the permittee or licensee, or the heirs, successors or assigns of said permittee or licensee, has failed to observe any of the terms and conditions in the permit or license as issued, then and in that case the said commission, after due notice to the permittee, licensee, or the heirs, successors or assigns of such permittee or licensee, and a hearing thereon, may revoke said permit or license and declare the water to be unappropriated and open to further appropriation in accordance with the terms of this act. And the findings and declaration of said commission shall be deemed to be prima facie correct until modified or set aside by a court of competent jurisdiction; *provided*, that any action brought so to modify or set aside such finding or declaration must be commenced within thirty days after the service of notice of said revocation on said permittee or licensee, his heirs, successors or assigns. And every licensee or permittee under the provisions of this act if he accept such permit or license shall accept the same under the conditions precedent that no value whatsoever in excess of the actual amount paid to the state therefor shall at any time be assigned to or claimed for any permit or license granted or issued under the provisions of this act, or for any rights granted or acquired under the provisions of this act, in respect to the regulation by any competent public authority of the services or the price of the services to be rendered by any permittee or licensee, his heirs, successors or assigns or by the holder of any rights granted or acquired under the provisions of this act, or in respect to any valuation for purposes of sale to or purchase, whether through condemnation proceedings or otherwise, by the state or any city, city and county, municipal water district, irrigation district, lighting district or any political subdivision of the state, of the rights and property of any permittee or licensee, or the possessor of any rights granted, issued, or acquired under the provisions of this act. The application for a permit by municipalities for the use of water for said municipalities or the inhabitants thereof for domestic purposes shall be considered first in right, irrespective of whether they are first in time; *provided, however*, that such application for a permit or the granting thereafter of permission to any municipality to appropriate waters, shall not authorize the appropriation of any water for other than municipal purposes; *and providing, further*, that where permission to appropriate is granted by the state water commission to any municipality for any quantity of water in excess of the existing municipal needs therefor, that pending the application of the entire appropriation permitted, the state water commission shall have the power to issue permits for the temporary appropriation of the excess of such permitted appropriation over and above the quantity being applied from time to time by such municipality; *and providing, further,* that in lieu of the granting of such temporary permits for appropriation, the state water commission may authorize such municipality to become as to such surplus a public utility, subject to the jurisdiction and control of the railroad commission of the state of California for such period or periods from and after the date of the issuance of such permission to appropriate, as may be allowed for the application to municipal uses of the entire appropriation permitted; *and provided, further,* that when such municipality shall desire to use the additional water granted in its said application it may so do upon making just compensation for the facilities for taking, conveying and storing such additional water rendered valueless for said purposes, to the person, firm or corporation which constructed said facilities for the temporary use of said excess waters, and which compensation, if not agreed upon between the municipality and said person, firm or corporation, may be determined in the manner provided by law for determining the value of property taken by and through eminent domain proceedings.

SEC. 21. Nothing herein contained shall be construed to deprive the state or any city, city and county, municipal water district, irrigation district, lighting district or political subdivision of the state, or any person, company or corporation of any rights which, under the law of this state they may have, to acquire property by or through eminent domain proceedings.

SEC. 22. Licenses hereafter granted for water or use of water shall be subject to the right of the state to impose the fees and charges provided in this act.

SEC. 23. Every person, firm, association or corporation making application for a permit to appropriate water or the use of water under this act shall pay to the state water commission, at the time of filing said application, if the purpose or use is for the generation of electricity, or electrical or other power, a fee of two dollars and fifty cents for each theoretical horsepower capable of being developed by the works up to one hundred theoretical horsepower, with a minimum fee of twenty-five dollars, and above said one hundred theoretical horsepower the fee shall be five hundred dollars up to and including ten thousand theoretical horsepower, and one thousand dollars above ten thousand theoretical horsepower capable of being so developed or a fee of ten dollars if the purpose be other than for the generation of electricity, or electrical or other power. Every person, firm, association or corporation at the time of receiving a license to appropriate water or the use of water, if the purpose be for the generation of electricity, or electrical or other power, shall pay to said commission when the said license is issued, and annually thereafter, a charge of twenty-five cents for each theoretical horsepower capable of being developed by the proposed works. If the purpose of use is for other than the generation of electricity, or electrical or other power, every person, firm, association or corporation receiving a license to appropriate water shall pay to the said commission when said license is issued, and annually thereafter, a charge of ten cents per miner's inch for each miner's inch specified in the license, and for the purpose of this act forty miner's inches shall be equivalent to one cubic foot per second; *provided, however,* that no annual charge shall be made when the appropriation is made for use for irrigation purposes upon lands, not exceeding one hundred and sixty acres in area to be actually occupied by such appropriator and cultivated in whole or in part by him, or when said water is used for mining purposes, and the amount of water so used for such mining purposes does not exceed five hundred miner's inches, or when the water is used for the generation of power when the same does not exceed fifty horsepower and is for the private use of the appropriator. And all such fees and charges shall forthwith be paid into the state treasury by the state water commission, and the fee and annual charges provided in this section shall be subject to change by law at not less than ten year intervals beginning with the date of the license issued by the state water commission.

SEC. 24. Upon its own initiative or upon petition signed by one or more claimants to water or the use of water upon any stream, stream system, lake, or other body of water, requesting the ascertainment of the relative rights of the various claimants to the water or the use of water of that stream, stream system, lake or other body of water, it shall be the duty of the state water commission, if, upon investigation it finds the facts and conditions are such as to justify, to make an ascertainment of the said rights, fixing a time for the beginning of the taking of testimony and the making of such investigation as will enable it to ascertain the rights of the various claimants. In case suit is brought in the superior court for determination of rights to water or the use of water, the case may, in the discretion of the court, be transferred to the state water commission for investigation, as referee. In any case wherein the water commission shall proceed to investigate or ascertain water rights the said commission shall notify in writing in the manner provided in sections one thousand and eleven, one thousand and twelve and one thousand and thirteen of the Code of Civil Procedure all persons, firms, associations or corporations claiming or possessing any water rights which are to be the subject of ascertainment by the said commission.

SEC. 25. Upon the completion of the taking of testimony and evidence by the state water commission, the said commission shall immediately give notice by registered mail to the various claimants or possessors of water rights that, at a date and place named in the said notices, which date shall not be less than fifteen days nor more than thirty days later than the date of said notice, all of said testimony and evidence will be open to public inspection. And said testimony and evidence shall be held open to public inspection at said places for a specified period of not less than thirty days nor more than ninety days, and thereafter the said commission shall cause its findings and ascertainment of the rights of the respective claimants to said water to be made and filed in the superior court in each of the counties where said water is appropriated.

SEC. 26. If any person, firm, association or corporation claiming or possessing any interest in or right to the waters of any stream, stream system, lake or other body of water involved in any investigation or ascertainment by the state water commission of the rights to the water of said stream, stream system, lake or other body of water, desires to contest any of the interests in or rights to any of the said waters of any other person, firm, association or corporation such person, firm, association or corporation desiring so to contest shall, within ten days after the expiration of the period for public inspection prescribed in section twenty-five of this act, notify, in writing, the state water commission of said desire so to contest. Said notice shall state the ground of contest, which shall be verified by the oath of the contestant, his agent or attorney. Within ten days of the receipt of the notice cf contest the state water commission shall notify the contestant and the person, firm, association or corporation whose rights are contested to appear before it at a time and place specified in said notice, and that at said time and place said contest will be heard; *provided,* that said time shall not be less than thirty days nor more than sixty days from the date of the service of the notice of the commission; *provided, further,* that if any person, firm, association or corporation desires to contest any such ascertainment by the state water commission as hereinbefore provided, such contest may be brought as provided in sections thirty-one and thirty-two hereof.

Sec. 27. Said notice by said water commission shall be served and return made thereon in the same manner in which summons and return thereon are made in civil actions in the superior courts of this state. The water commission shall have power to adjourn hearings of contest from time to time upon reasonable notice to all parties in interest, and to issue subpœnas for and compel the attendance of witnesses to testify before it and produce papers, books, maps and other documents.

Sec. 28. The state water commission shall require from the party bringing the contest before it under section twenty-six of this act a deposit of five dollars for each day it shall be engaged in taking testimony in such contest. Upon the final ascertainment by the state water commission in any contest, the said commission shall enter an order directing the return of the deposit to the depositor if the contest shall be determined in his favor, but, if the contest shall be determined against the person bringing it, the said deposit shall be immediately paid into the state treasury.

Sec. 29. Not less than fifteen days nor more than thirty days after the expiration of the period during which the testimony and evidence is to be kept open for public inspection, or if any contest shall be made, not less than fifteen days nor more than thirty days after the settlement of said contest by the water commission, the testimony and evidence in the original hearing and the testimony and evidence taken in said contest shall be filed in the office of the water commission.

Sec. 30. The water commission may, in its discretion and in addition to the testimony and evidence submitted to it by the parties claimant to or possessors of water rights on any stream, stream system, lake or other body of water cause to be made an examination of said stream, stream system, lake or other body of water and the works diverting or utilizing water therefrom. Said examination may include the gathering of whatever data covering said stream, stream system, lake or other body of water and the various ditches and canals taking water therefrom as the said commission may require, as well as such other data and information as may, in the discretion of the said commission, be necessary to enable it properly to ascertain the relative rights of the parties claiming rights to use the waters of said stream, stream system, lake, or other body of water. The results of said examination shall be filed in the office of said commission and be open to public inspection as provided in this act for the filing and public inspection of other evidence of a like nature.

SEC. 31. As soon as practicable after the hearing of testimony and evidence, the hearing of contest, and the gathering and filing of such data and information as the water commission shall, of its own motion, direct to be gathered, the said water commission shall record in its office its ascertainment of and specific findings upon the rights of the several claimants to the use of the waters of any stream, stream system, lake or other body of water. Immediately thereafter, the said water commission shall file a certified copy of said ascertainment and specific findings together with the original evidence and testimony taken before it and all data and information gathered by its order with the clerk of the superior court in and for the county in which such stream, stream system, lake or other body of water or any part thereof is situated.

SEC. 32. After the filing with the clerk of the superior court of the evidence, data, information, specific findings and ascertainment as required by section thirty-one of this act, the same shall be received in the superior court as prima facie evidence of the facts, specific findings and ascertainment therein set forth. And at any time within one year after such filing an action may be brought, upon the direction of the state water commission, by the attorney general in said superior court in which said evidence, data, information, specific findings and ascertainment shall have been so filed. Or an action may be brought in said court by any one or more of the possessors or claimants concerning whose rights to any of the waters of the stream, stream system, lake or other body of water the state water commission shall have made the specific findings and ascertainment filed in said court. Said action if brought by the attorney general shall be brought in the name and behalf of the people of the state of California to quiet the title of the state of California or the people thereof to any and all water or water rights which it may have in or on said stream, stream system, lake or other body of water, and, to cause all parties whose rights have been so ascertained to appear and interplead in said action in defense and determination of each and all of their respective rights, which rights, as against the state and with regard to the different rights and priorities of said rights among themselves, shall be determined by the court in said action. And if an action be brought by any one or more of said claimants or possessors, said action may be brought in the name of the said possessor or claimant and to cause all parties, whose rights have been ascertained, to appear and interplead in said action in defense and determination of each and all of their respective rights, which rights, as against the state or the people thereof, and with regard to the different rights and priorities of said rights among themselves shall be determined by the court in said action. And from and after the filing of the complaint in such action, the proceedings therein shall be as in other cases heard and determined in said court, and in accordance with the provisions of the Code of Civil Procedure of this state; *provided*, that the evidence, data, information, specific findings and ascertainment so filed with the superior court as provided in section thirty-one of this act must be considered by said court in its determination of both or either of said actions, and the court may affirm, modify or reject such specific findings and ascertainment and may make other or different findings as in its judgment the evidence justifies.

Sec. 33. All existing lawful appropriations of water or the use thereof, shall be and hereby are respected and upheld to extent of the amount of water appropriated and actually put or in process of being put, from the initial date of the act of appropriation, with due diligence in proportion to the magnitude of the work necessary properly to utilize the water for the useful or beneficial purpose for which it was appropriated, or for which it is being used.

Sec. 34. Whenever proceedings shall be instituted for the ascertainment by the state water commission of rights to water or the use of water, it shall be the duty of all claimants interested therein and having notice thereof as in this act provided to appear and submit proof of their respective claims at the time and in the manner required by law; and any such claimant who shall fail to appear in such proceedings and submit proof of his claim shall be barred and estopped from subsequently asserting any rights theretofore acquired upon the stream, stream system, lake or other body of water, or portion of such stream, stream system, lake or other body of water, embraced in such proceedings, and shall be held to have forfeited all rights to said water or the use of water theretofore claimed by him on such stream, stream system, lake or other body of water, unless entitled to relief under the laws of this state; *provided,* that such proceedings shall result in an ascertainment by the state water commission and a decree by the superior court based upon such ascertainment and specific findings or a modification of said ascertainment or specific findings.

Sec. 35. In any suit wherein the state is or the people of the state are a party for the determination of a right to the use of the water of any stream, stream system, lake or other body of water, or of any portion of any stream, stream system, lake or other body of water, all who claim the right to use such water shall be made parties. When any such suit has been filed the court may call upon the state water commission to make or furnish a complete hydrographic survey of such stream, stream system, lake or other body of water, in order to obtain all the data necessary to the determination of the rights involved. The disbursements made in litigating the rights involved in such suit may be taxed by the court as in other equity suits, exclusive of the cost of such hydrographic survey.

Sec. 36. Upon the adjudication of the rights to the use of the water of a stream, or stream system, lake or other body of water, or any portion of a stream, stream system, lake or other body of water, a certified copy of the decree shall be prepared by the clerk of the court, without charge, and filed in the office of the state water commission, and said commission shall deliver to every party in such decree a certified copy thereof upon demand and the payment of the fees provided in this act. And the said commission shall file, for record, in the office of the recorder of each county in which any portion of said stream, stream system, lake or other body of water is situated, a certified copy of said decree. Said decree shall in every case declare as to the water right adjudged to each party, whether riparian or by appropriation, the extent, the priority, amount, purpose of use, point of diversion, and place of use of said water; and, as to water used for irrigation, such decree shall also declare the specific tracts of land to which it shall be appurtenant together with such other conditions as may be necessary to define the right and its priority. But the failure of any party entitled thereto to demand or receive a copy of said decree shall not be considered to have prejudiced him or his rights in any way.

SEC. 37. The power to supervise the distribution of water in accordance with the priorities established under this act, when such supervision does not contravene the authority vested in the judiciary of the state, is hereby vested in the state water commission.

SEC. 38. The diversion or use of water subject to the provisions of this act other than as it is in this act authorized is hereby declared to be a trespass, and the state water commission is hereby authorized to institute in the superior court in and for any county wherein such diversion or use is attempted appropriate action to have such trespass enjoined.

SEC. 39. Water or the use of water which has heretofore been appropriated or acquired, or which shall hereafter be appropriated or acquired for one specific purpose, shall not be deemed to be appropriated or acquired for any other or different purpose. And any person, firm, association or corporation applying to the state water commission for a license to appropriate water or the use of water shall state in the application for said license the specific purpose to which it is proposed to put such water or the use thereof. Water heretofore or hereafter appropriated for other than domestic use, may be applied to domestic use, in whole or in part, without a separate and distinct appropriation being made therefor. And water appropriated for one purpose under the provisions of this act may be subsequently appropriated for other purposes under the provisions of this act; *provided,* that such subsequent appropriation shall not injure any previous appropriation.

SEC. 40. The state water commission is also authorized and empowered to investigate any natural situation available for reservoirs or reservoir systems for gathering and distributing flood or other waters not under beneficial use in any stream, stream system or lake or other body of water, and to ascertain the feasibility of such projects, including the supply of water that may thereby be made available, the extent and character of the areas that may be thereby irrigated, and make estimate of the cost of such project.

SEC. 41. Nothing in this act shall be construed as depriving any city, city and county, municipal water district, irrigation district or lighting district of the benefit of any law heretofore or hereafter passed for their benefit in regard to the appropriation or acquisition of water or the use of water; and nothing in this act shall affect or limit in any manner whatsoever the right or power of any municipality which has heretofore appropriated or acquired water or the use of water for municipal purposes, to use or to sell or otherwise dispose of such water or the use thereof, either within or without its limits for domestic, irrigation or other purposes, in accordance with laws in effect at the time of the passage of this act.

SEC. 42. The word ''water'' in this act shall be construed as embracing the term ''or use of water''; and the term ''or use of water'' in this act shall be construed as embracing the word ''water.'' Whenever the terms stream, stream system, lake or other body of water or water occurs in this act, such term shall be interpreted to refer only to surface water, and to subterranean streams flowing through known and definite channels. But nothing in this act shall be construed as giving or confirming any right, or title, or interest to or in the corpus of any water; *provided,* that the term "useful or beneficial purposes" as used in this act shall not be construed to mean the use in any one year of more than two and one-half acre feet of water per acre in the irrigation of uncultivated areas of land not devoted to cultivated crops.

Sec. 43. Nothing in this act shall be construed as depriving any person, firm, association or corporation of the right of appeal conferred under the laws of this state.

Sec. 44. All acts or parts of acts in conflict herewith are hereby repealed.

Sec. 45. This act shall be known as the "water commission act."

Sec. 46. If any section, subsection, sentence, clause or phrase of this act is for any reason held to be unconstitutional, such decision shall not affect the validity of the remaining portions of this act. The legislature hereby declares that it would have passed this act, and each section, subsection, sentence, clause and phrase thereof, irrespective of the fact that any one or more other sections, subsections, sentences, clauses or phrases be declared unconstitutional.

NEEDED CHANGES.

PROPOSED AMENDMENTS TO THE WATER COMMISSION ACT.

DETERMINATION OF RIGHTS.

Section 1. In case suit is brought in the superior court for determination of rights to water or the use of water, the case may in the discretion of the court, be transferred to the state water commission for investigation, as referee.

Sec. 2. Upon its own initiative or upon petition signed by one or more claimants to water or the use of water upon any stream, stream system, lake, or other body of water (all of which sources of supply are hereinafter referred to as ''stream system''), requesting the determination of rights, based upon prior appropriation, of the various claimants to the water of that stream system, it shall be the duty of the state water commission, if, upon investigation it finds the facts and conditions are such as to justify, to enter an order granting said petition and to make proper arrangements to proceed with such determination.

Sec. 3. As soon as practicable after the state water commission shall make and enter the order granting the said petition or selecting the stream system upon which the determination of water rights by appropriation is to begin, it shall prepare a notice setting forth the fact of the entry of said order and of the pendency of the said proceedings, the date when the state water commission shall begin said examination, and that all claimants to rights by appropriation of the waters of said stream system are required, as in this act provided, to make proof of their claims. The notice shall be published for a period of four consecutive weeks in one or more newspapers of general circulation published in each county in which any part of said stream system is situated.

Sec. 4. At the time set in said notice, the state water commission shall begin an investigation of the flow of the stream system and of the conduits diverting water, and of the lands irrigated or irrigable therefrom, and shall gather such other data and information as may be essential to the proper determination of the water rights by appropriation. It shall reduce its observations and measurements to writing. It shall execute surveys and shall prepare maps from the observations of such surveys in accordance with such uniform rules and regulations as it may adopt; which surveys and maps shall show with substantial accuracy the course of the stream or streams; the location of each conduit diverting water therefrom, land irrigated and capable of being irrigated by each conduit and the kind of culture upon the irrigated land. The maps shall be prepared as the surveys and observations progress, and, when completed, they shall be filed and made of record in the office of the state water commission.

Sec. 5. Upon the completion of such measurements and maps, the state water commission shall prepare a notice setting forth the date, prior to which the proofs (to be furnished by claimants upon forms supplied by the state water commission and more specifically referred to in the next section hereof) as to the rights by appropriation of the waters of said stream system, shall be filed; *provided, however,* that the date set, prior to which said proofs must be filed, shall not be less than sixty days from the date of the last publication of said notice as hereinafter provided. The notice shall be deemed to be an order of the state water commission as to its contents, and it shall be published by the state water commission for a period of four consecutive weeks in one or more newspapers of general circulation published in each county in which any part of said stream system is situated. At or near the time of the first publication of said notice it shall be the duty of the state water commission to send by registered mail to each claimant to rights by appropriation of the waters of said stream system, in so far as such claimant can be reasonably ascertained at his last known place of address, a notice equivalent in terms to the said published notice.

SEC. 6. The state water commission shall, in addition, enclose with the notice to be mailed as aforesaid, blank forms (proofs of appropriation) upon which said claimant shall present in writing all particulars necessary for the determination of his right by appropriation of the waters of said stream system, the said statement to include the following:

(*a*) The name and post office address of the claimant.
(*b*) The nature of the right or use on which the claim for appropriation is based.
(*c*) The date of the initiation of such right and a description of works of diversion and distribution.
(*d*) The date of beginning of construction.
(*e*) The date when completed.
(*f*) The dates of beginning and completion of enlargements.
(*g*) The dimensions of the ditch as originally constructed and enlarged
(*h*) The date when water was first used for irrigation or other beneficial purposes, and if used for irrigation, the amount of land irrigated the first year, the amount in subsequent years, with the dates of irrigation and the area and the location of the lands which are intended to be irrigated.
(*i*) The character of the soil and the kind of crops cultivated, and such other facts as will show the extent and nature of the right and a compliance with the law in acquiring the same, as may be required by the state water commission. Each claimant shall be required to certify to his statements, under oath.

SEC. 7. After the date fixed for the filing of proofs, no proofs shall be received or filed with the state water commission; *provided, however,* that the state water commission may, for cause shown, in its discretion, extend the time in which proofs may be filed. Upon neglect or refusal of any person to make proof of his claim to rights by appropriation of the waters of such stream system, as required by this act, prior to the expiration of the period fixed by the state water commission, during which proofs may be filed, the state water commission shall determine the right by appropriation of such person on such evidence as it may obtain or may have on file in its office in the way of maps, plats, surveys and transcripts; and exceptions to such determination may be filed in court as hereinafter provided.

SEC. 8. Any claimant of a right by appropriation of the water of any stream system upon whom no service of notice shall have been had of the pendency of proceedings for the determination of the rights by appropriation of the waters of said stream system, and who shall have had no actual knowledge or notice of the pendency of said proceedings, may at any time prior to the expiration of three (3) months after the entry of the determination of the state water commission, as provided in section thirteen of this act, file a petition to intervene in said proceedings. Such petition shall be under oath and shall contain, among other things, all matters required by this act of claimants who have been duly served with notice of said proceedings, and also a statement that the intervenor had no actual knowledge or notice of the pendency of said proceedings. Upon the filing of said petition in intervention, the petitioner shall be allowed to intervene and thereafter shall have all the rights and be subject to all the duties of the claimants who have been duly served.

SEC. 9. At the time of submission of proof of appropriation, the state water commission shall collect from such claimants, on the basis of the statements in the proofs, a fee of fifteen (15) cents for each acre of irrigated or irrigable lands up to and including one hundred (100) acres, ten (10) cents for each acre in excess of one hundred (100) acres and up to and including one thousand (1,000) acres, and five (5) cents per acre for each acre in excess of one thousand (1,000) acres; also twenty-five (25) cents for each theoretical horsepower up to and including one hundred (100) horsepower, fifteen (15) cents for each theoretical horsepower in excess of one hundred (100) horsepower and up to and including one thousand (1,000) horsepower, and five (5) cents for each theoretical horsepower in excess of one thousand (1,000) horsepower; also five (5) dollars for each cubic foot per second, or fraction thereof, claimed for any purpose other than irrigation or power; the minimum fee, however, for any claimant to be five (5) dollars. All fees charged and collected under this section shall be paid, at least once each month, accompanied by a detailed statement thereof, into the treasury of the state.

SEC. 10. As soon as practicable after the expiration of the period fixed in which proofs may be filed, the state water commission shall assemble all proofs which have been filed, and prepare and certify an abstract of all of the said proofs, which shall be printed in the state printing office. As soon as practicable the state water commission shall prepare a notice fixing and setting a time and place, reasonably convenient to the claimants, when and where the evidence taken by or filed with it shall be open to the inspection of all interested persons, said period of inspection to be not less than ten (10) days, which notice shall be deemed to be an order of the state water commission as to the matters contained therein. A copy of said notice together with a printed copy of the said abstract of proofs shall be sent by registered mail, at least fifteen (15) days prior to the first day of such period of inspection, to each claimant who has appeared and filed proof as herein provided. A representative of the state water commission shall be present at the time and place designated in said notice, and allow, during said period, any person interested to inspect such evidence and proofs as have been filed in accordance with this act.

SEC. 11. Should any claimant desire to contest any of the statements and proofs of claims filed with the state water commission by any other claimant to the waters of the stream system, he shall, within fifteen (15) days after said evidence and proofs shall have been opened to public inspection, or within such further time as for good cause shown may be allowed by the state water commission upon application made prior to the expiration of said fifteen (15) days, in writing notify the state water commission, stating with reasonable certainty the grounds of the proposed contest, which statement shall be verified by the affidavit of the contestant, his agent or attorney. The statements or proofs of the person whose rights are contested and the verified statement of the contestant shall be deemed sufficient to constitute a proper cause for such contest.

SEC. 12. Within ten (10) days after the receipt of the notice of contest the state water commission shall notify by registered mail the contestant and the claimant whose rights are contested to appear before it at a time and place specified in said notice, and that at said time and place said contest will be heard; *provided,* that said time shall not be less than fifteen (15) days nor more than sixty (60) days from the date of the mailing of the notice of the commission. The state water commission shall have power to adjourn hearings of contests from time to time upon reasonable notice to all parties in interest, and to issue subpenas for and compel the attendance of witnesses to testify before it and to produce papers, books, maps and other documents. The costs of taking testimony at a hearing shall be borne by the parties thereto as follows: each party shall pay for the direct examination of his own witness and the cross-examination of opponent's witness and shall share equally for that part of the examination directed by the representative of the commission. One copy of the transcript of testimony taken at the hearing shall be furnished to the commission and the cost thereof borne equally by the parties.

SEC. 13. As soon as practicable after the hearing of contests it shall be the duty of the state water commission to make, and cause to be entered of record in its office an order determining and establishing the several rights by appropriation of the waters of said stream; *provided, however,* that within sixty (60) days after the entry of an order establishing water rights, the state water commission may, for good cause shown, reopen the proceedings and grant a rehearing. Such order and determination shall be prepared, and after certification by the state water commission, printed in the state printing office. A copy of said order of determination shall be sent by registered mail to each person who has filed proof of claim, and to each person who has become interested through intervention or as a contestant under the provisions of section eight or section eleven of this act.

SEC. 14. As soon as practicable, after the entry of the order of determination a certified copy thereof, together with the original evidence and transcript of testimony filed with, or taken before the state water commission, as aforesaid, duly certified by it, shall be filed with the clerk of the superior court of the county in which said stream system, or any part thereof, is situated. Upon the filing of the certified copy of said order, evidence, and transcript with the clerk of the court in which the proceedings are to be had, the state water commission shall procure an order from said court setting a time for hearing. The clerk of such court shall immediately furnish the state water commission with a certified copy of said order. It shall be the duty of the state water commission immediately thereupon to mail a copy of such certified order of the court, by registered mail, addressed to each known party in interest at his last known place of residence, and to cause the same to be published at least once a week for four consecutive weeks in some newspaper of general circulation published in each county in which such stream system or any part thereof is located, and the state water commission shall file with the clerk of the court proof of such service by registered mail and by publication. Such service by registered mail and by publication shall be deemed full and sufficient notice to all parties in interest of the date and purpose of such hearing.

SEC. 15. At least ten (10) days prior to the day set for hearing all parties in interest who are aggrieved or dissatisfied with the order of determination of the state water commission shall file with the clerk of said court notice of exceptions to the order of determination of the state water commission, which notice shall state briefly the exceptions taken, the reasons therefor, and the prayer for relief, and a copy thereof shall be transmitted by registered mail at least ten (10) days prior to such hearing, to the state water commission and to each claimant, who was an adverse party to any contest wherein such exceptor was a party in the proceedings. The order of determination by the state water commission and the statements or claims of claimants and exceptions made to the order of determination shall constitute the pleadings and there shall be no other pleadings in the cause. If no exceptions shall have been filed with the clerk of the court as aforesaid, then on the day set for the hearing, on motion of the state water commission, or its attorney, the court shall enter a decree affirming said order of determination. On the day set for hearing all parties in interest who have filed notices of exceptions as aforesaid shall appear in person or by counsel and it shall be the duty of the court to hear the same or set the time for hearing, until such exceptions are disposed of, and all proceedings thereunder shall be as nearly as may be in accordance with the rules governing civil actions.

SEC. 16. For further information on any subject in controversy the court may employ one or more qualified persons to investigate and report thereon under oath, subject to examination by any party in interest as to his competency to give expert testimony thereon. The court may, if necessary, refer the case for such further evidence to be taken by the state water commission as it may direct, and may require a further determination by it. After the hearing, the court shall enter a decree affirming or modifying the order of the state water commission. Said decree shall in every case declare as to the water right by appropriation adjudged to each party, the extent, priority, amount, purpose of use, point of diversion, and place of use of said water; and as to water used for irrigation, such decree shall also declare the specific tracts of land to which it shall be appurtenant together with such other conditions as may be necessary to define the right and its priority. Upon the hearing the court may assess and adjudge against any party such costs as it may deem just. Appeals from such decree may be taken to the supreme court by the state water commission or any party in interest, in the same manner and with the same effect as in civil cases.

SEC. 17. A certified copy of the decree of the superior court shall be prepared by the clerk thereof, without charge, and filed for record in the office of the county recorder of each county in which any part of the stream system is situated and also in the office of the state water commission. It shall be the duty of the state water commission to issue to each claimant represented in such determination a certificate to be signed by the president of the state water commission, and attested under seal by the secretary of said commission, setting forth the name and post office address of the owner of the right; the priority of the date, extent and purpose of such right; and if such water be for irrigation purposes, a description of the legal subdivisions of land to which said water is appurtenant.

SEC. 18. Whenever proceedings shall be instituted for the determination by the state water commission of rights by appropriation of water, it shall be the duty of all claimants interested therein and having notice thereof as in this act provided to appear and submit proof of their respective claims at the time and in the manner required by law; and any such claimant who shall fail to appear in such proceedings and submit proof of his claim shall be barred and estopped from subsequently asserting any rights theretofore acquired upon the stream system, embraced in such proceedings, and shall be held to have forfeited all rights by appropriation to said water theretofore claimed by him on such stream system, unless entitled to relief under the laws of this state; *provided*, that such proceedings shall result in a determination by the state water commission and a decree by the superior court confirming or modifying said determination. Such decree shall be conclusive as to the rights by appropriation of all existing claimants upon the stream system lawfully embraced in the determination.

SEC. 19. The state water commission shall have authority and power in making a determination as to the rights by appropriation of the waters of any stream system, to fix a time limit for the completion of all appropriations of water from such stream, where such rights of appropriations were initiated prior to December 19, 1914, and since prosecuted with reasonable diligence; and such appropriators having been duly notified as provided in this act, must appear and submit their proofs of claim, or they shall be deemed and held to be in default, and to have abandoned or to have no right, title or interest in or to the waters of such stream. In determining rights of such appropriators the state water commission shall prescribe such a reasonable time for the completion of such appropriations, and the application of the water appropriated to a beneficial use, as will enable such appropriators acting in good faith and with due diligence to complete the same. The findings of the state water commission shall provide for the submission of proof or evidence as to the completion of such appropriation and the amount of water actually applied to beneficial use, upon the expiration of such time limit, and shall, in accordance with such proof, enter supplemental findings, establishing and determining such rights of appropriation, in so far as the same shall have been completed; and certificates of water right shall be issued in accordance with such supplemental findings and order of determination of said commission, but this section shall not be construed to confer any rights of appropriation upon parties who shall have abandoned their said appropriations or failed to use due diligence in the application of the water to a beneficial use and in the completion of their appropriations, and all such appropriators, who shall fail to complete their said appropriations within the limit of time fixed by the state water commission in said findings, or such further time granted upon application made prior to the expiration of such time limit, as the state water commission shall find equitable and just, shall be deemed to have abandoned their rights of appropriation, and rights acquired by virtue thereof waived, and such appropriators shall be deemed and held to have no right, title or interest in or to the waters of such stream by virtue of their said appropriations.

AN ACT

An act to amend an act known as the "Water Commission Act," approved June 16, 1913, amending section thirty-seven thereof and adding thereto five new sections, to be numbered thirty-seven a, thirty-seven b, thirty-seven c, thirty-seven d, thirty-seven e, relating to the distribution of water and providing for the appointment of water masters, and defining their duties.

The people of the State of California do enact as follows:

SECTION 1. Section thirty-seven of an act known as the "Water Commission Act," approved June 16, 1913, is hereby amended to read as follows:

37. The state water commission shall divide the state into water districts to be so constituted and adjusted as to insure the most practical and economical supervision of the distribution of water on the part of the state. Said water districts shall not be created until a necessity therefor shall arise and shall be created and changed from time to time as the claims to water shall require.

SEC. 2. A new section is hereby added to said act, to be numbered section thirty-seven *a*, and to read as follows:

37*a*. One or more water masters for each water district shall be appointed by the state water commission. The water master shall be properly qualified and shall perform the duties imposed on him by this act as an employee under the general supervision and control of the state water commission. It shall be the duty of the water master to divide the waters of the streams, or other sources of supply, among the several conduits, ditches, pipe lines and other means of diversion (all of which are hereinafter referred to as conduits) and reservoirs taking water therefrom, according to the rights of the water users as fixed by the permits or licenses issued by the state water commission or the adjudications of the courts, and to so adjust or close the headgates of conduits and regulate the controlling works of reservoirs, as may be necessary to insure a proper distribution of the water thereof among the water users entitled to its use. Whenever in the pursuance of his duties the water master regulates a headgate to a conduit or the controlling works of reservoirs, it shall be his duty to attach to such headgate or controlling works a written notice properly dated and signed, setting forth the fact that such headgate or controlling works has been properly regulated and is wholly under his control and such notice shall be a legal notice to all parties interested in the diversion and distribution of the water of such conduit or reservoir.

Sec. 3. A new section is hereby added to said act, to be numbered section thirty-seven *b*, and to read as follows:

Sec. 37*b*. Any person who shall wilfully and without authority open, close, change or interfere with any headgate, waterbox or measuring device while under the control of the water master, or who shall wilfully take or use water which has been denied him by the water master under the provisions of this act, shall be deemed guilty of a misdemeanor. The possession or use of water when the same shall have been so denied him by the water master shall be prima facie evidence of guilt of the person using it.

Sec. 4. A new section is hereby added to said act, to be numbered section thirty-seven *c*, and to read as follows:

Sec. 37*c*. The owner of any conduit shall construct and maintain to the satisfaction of the state water commission a substantial and serviceable headgate or diversion works, at or near the point where the water is diverted, which shall be of such construction that it can be locked and kept closed by the water master; and such owner shall construct and maintain, when required by the state water commission, suitable measuring devices at such points along such ditch as may be necessary for the purpose of assisting the water master in determining the amount of water that is to be diverted into said conduit from the stream. Any and every owner or manager of a reservoir located across or upon the bed of a natural stream or of a reservoir which requires the use of a natural stream channel, shall construct and maintain, when required by the state water commission, a measuring device of a plan to be approved by the state water commission, below such reservoir, and a measuring device above such reservoir, on each or every stream or source of supply discharging into such reservoir, for the purpose of assisting the state water commission or water master in determining the amount of water to which appropriators are entitled and thereafter diverting it for such appropriators' use. If any such owner or owners of water works shall refuse or neglect to construct and put in such headgates or measuring devices after thirty (30) days notice, the water master may close such ditch, and the same shall not be opened or any water diverted from the source of supply, under the penalties prescribed by law for the opening of headgates lawfully closed until the requirements of the state water commission as to such headgates or measuring device have been complied with, and if any owner or manager of a reservoir located across the bed of a natural stream, or of a reservoir which requires the use of a natural stream channel, shall neglect or refuse to put in such measuring devices after thirty (30) days notice by the state water commission, the water master may open the sluicegate or outlet of such reservoir and the same shall not be closed except by order of the state water commission, under the penalties of the law for changing or interfering with headgates, until the requirements of the state water commission as to such measuring devices are complied with.

Sec. 5. A new section is hereby added to said act, to be numbered section thirty-seven *d*, and to read as follows:

Sec. 37*d*. The water master shall have the power to arrest any person violating any of the provisions of sections thirty-seven *b* and thirty-seven *c* of this act, and to give him into the custody of the sheriff, or other competent police officer within the county, and immediately thereafter make complaint before a magistrate against the person so arrested.

SEC. 6. A new section is hereby added to said act, to be numbered section thirty-seven *e*, and to read as follows:

Sec. 37*e*. Any person violating any of the provisions of sections thirty-seven *b* and thirty-seven *c* of this act shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be fined in a sum not less than twenty-five (25) dollars, nor more than two hundred fifty (250) dollars, or imprisoned in the county jail not less than ten (10) days nor more than six (6) months or by both such fine and imprisonment.

An act to amend an act, known as the "Water Commission Act," approved June 16, 1913, by amending section fifteen thereof, relating to the appropriation of water.

The people of the State of California do enact as follows:

SECTION 1. Section fifteen of an act known as the "Water Commission Act," approved June 16, 1913, is hereby amended to read as follows:

15. The state water commission shall allow, under the provisions of this act, the appropriation for beneficial purposes of unappropriated water unless, in the opinion of the said commission, such appropriation would be detrimental to the public welfare.

An act to amend an act known as the "Water Commission Act," approved June 16, 1913, by amending section twenty-three thereof, relating to fees to be collected by the state water commission.

The people of the State of California do enact as follows:

SECTION 1. Section twenty-three of an act known as the "Water Commission Act," approved June 16, 1913, is hereby amended to read as follows:

23. Every person, firm, association or corporation making application for a permit to appropriate water or the use of water under this act shall pay to the state water commission, at the time of filing said application, a filing fee in the sum of five (5) dollars and, upon the issue of a permit, the additional fee, if the purpose or use is for the generation of electricity or electrical or other power, of ten (10) cents for each theoretical horsepower capable of being developed by the works up to and including one hundred (100) theoretical horsepower, of five (5) cents for each horsepower in excess of one hundred (100) theoretical horsepower up to and including one thousand (1,000) theoretical horsepower, and of one (1) cent for each theoretical horsepower in excess of one thousand theoretical horsepower; also, if for agricultural purposes, of five (5) cents for each acre of land to be irrigated by means of said appropriation to and including one hundred (100) acres, of three (3) cents per acre for each acre in excess of one hundred (100) acres up to and including one thousand (1,000) acres, and of two (2) cents for each acre over one thousand (1,000) acres. All fees shall forthwith be paid into the state treasury by the state water commission. No fee shall be required from any person, firm, association, or corporation exempt by any law of the State of California from the payment of such fee.

REASONS FOR CHANGES

DISCUSSION OF THE NECESSITY OF THE FOREGOING PROPOSED AMENDMENTS.

By L. D. BOHNETT, Attorney for the Commission.

The Water Commission Act in its present form fails to provide all of the machinery necessary to accomplish the full purpose of the act. Its operation for a period of two years has shown weaknesses, to correct which the State Water Commission has prepared the foregoing amendments, which it recommends to the legislature in the firm belief that their enactment is essential to the proper and efficient control and administration of the water of the state.

DETERMINATION OF RIGHTS.

One of the principal objects sought in the enactment of the law was the prevention of a great amount of litigation over water and water rights. This was to be accomplished by providing (Sec. 24 et seq.) that the State Water Commission should, upon its own initiative or upon petition of interested parties, ascertain the several rights of all claimants to the water or use of water of any stream, stream system, lake, or other body of water. The findings and conclusions of the commission, after being filed in the proper court and confirmed by its judgment, would finally determine in one proceeding rights which, without such a procedure, would be settled only by a large number of expensive and vexatious suits.

As the law stands today, however, the procedure for the determination of rights to the use of water is incomplete, indefinite, and otherwise unsatisfactory. In a number of the neighboring states this method of determination of rights to the use of water through the agency of a state commission has been practiced for a number of years and a procedure has there been developed which has proved satisfactory and economical and has withstood all attacks in the courts. The proposed amendment relating to this question has been prepared by adapting the provisions of the tried and effective laws of Oregon and Nevada, which have been found to work well in practice and have been approved by the court of last resort.

In upholding the Oregon statute upon this subject, the Supreme Court of the United States, in the case of *Pacific Live Stock Company* vs. *Lewis et al* (June 5, 1916), said:

"* * * A general outline of the statute, as it has been construed by the Supreme Court of the state, will serve to simplify the questions to be considered. It recognizes that in Oregon rights to use the waters of streams for irrigation and other beneficial purposes may be acquired by appropriation, adopts a comprehensive scheme for securing an economical, orderly and equitable distribution of the waters among those entitled to their use, incidentally prescribes a mode of determining the relative rights of the various claimants to the waters of each stream, and in large measure commits the administration of the scheme to the State Water Board and officers acting under the supervision of its members. When one or more users of water from any stream request it the board, if finding that the conditions justify it, is required to set in motion a proceeding looking to an ascertainment and adjudication of all rights to the waters of that stream. Every material step in the proceeding is to be attended with notice and an opportunity to be heard, the adequacy of which is manifest. * * * The board is then to examine all the evidence, make findings of fact therefrom, enter an order embodying the findings and provisionally determining the relative rights of the several claimants, and transmit the evidence and a copy of the order to the circuit court of the county wherein the stream or some part of it lies. Exceptions to the board's findings and order may be presented to the court and in disposing of them the court is to follow as near as may be the practice prevailing in suits in equity. All parties in interest, including the board as representing the state, are to be fully heard. Further evidence may be taken by the court, or the matter may be remanded with directions that additional evidence be taken and that the matter be again considered by the board, in which event the evidence and a copy of the further order of the board are to be transmitted to the court as in the first instance. In short, upon exceptions the court may re-examine the whole matter and enter such decree as the law and the evidence may require, whether it be an affirmance or a modification of the board's order. And even where no exceptions are presented a decree giving effect to the order is to be entered, that is to say, the matter is not to be left as if the order in itself constituted an effective adjudication.

"* * * All claimants are required to appear and prove their claims; no one can refuse without forfeiting his claim, and all have the same relation to the proceeding. It is intended to be universal and to result in a complete ascertainment of all existing rights to the end, first, that the waters may be distributed, under public supervision, among the lawful claimants according to their respective rights without needless waste or controversy; second, that the rights of all may be evidenced by appropriate certificates and public records, always readily accessible, and may not be dependent upon the testimony of witnesses with its recognized infirmities and uncertainties, and, third, that the amount of surplus or unclaimed water, if any, may be ascertained and rendered available to intending appropriators.

"* * * In such a proceeding the rights of the several claimants are so closely related that the presence of all is essential to the accomplishment of its purposes, and it hardly needs statement that these can not be attained by mere private suits in which only a few of the claimants are present, for only their rights as between themselves could be determined. As against other claimants and the public the determination would amount to nothing. And so, upon applying the test before indicated, it is apparent that the assumed substantial identity between the proceeding and the pending suits does not exist.

"* * * As an alternative to its first contention, which we hold untenable, the plaintiff insists that the statute is repugnant to the due process of law clause of the fourteenth amendment, first, because it requires a claimant, at his own expense, to assert and prove his claim before the board, and to pay an extortionate fee for having it considered—all under penalty of forfeiting his claim if he refuses—notwithstanding the board acts only administratively and its findings and order are not conclusive; second, because it permits the board to accept and act upon the sworn statements of claimants taken ex parte and upon the data set forth in the unsworn report of the engineer, without, as is asserted, affording any opportunity for showing their true value, or the want of it, by cross-examination or otherwise; and, third, because it requires that the board's findings and order, although only administrative in character, be followed and given effect in the distribution of the water pending the action of the circuit court upon them.

''A serious fault in this contention is that it does not recognize the true relation of the proceeding before the board to that before the court. They are not independent or unrelated, but parts of a single statutory proceeding, the earlier stages of which are before the board and the later stages before the court. In notifying claimants, taking statements of claim, receiving evidence and making an advisory report the board merely paves the way for an adjudication by the court of all the rights involved. As the Supreme Court of the state has said, the board's duties are much like those of a referee. (And see *Oregon R. R. & N. Co.* vs. *Fairchild*, 224 U. S. 510, 526–527.) All the evidence laid before it goes before the court, where it is to be accorded its proper weight and value. That the state, consistently with due process of law, may thus commit the preliminary proceedings to the board and the final hearing and adjudication to the court is not debatable. And so, the fact that the board acts administratively and that its report is not conclusive does not prevent a claimant from receiving the full benefit of submitting his claim and supporting proof to the board. That he is to do this at his own expense affords no ground for objection; on the contrary, it is in accord with the practice in all administrative and judicial proceedings. The fee alleged to be extortionate is a charge graduated according to the amount of land irrigated under the claim submitted, and is fifteen cents per acre for the first hundred acres, five cents per acre for the next nine hundred acres, and one cent per acre for any excess over one thousand acres. * * * In our opinion, the charge is not extortionate and its exaction is not otherwise inconsistent with due process of law.

''Upon examining the statute and the decisions of the Supreme Court of the state construing and applying it we are persuaded that it is not intended that the board shall accept and act upon anything as evidence that is devoid of evidential value or in respect of which the claimants concerned are not given a fair opportunity to show its true value, or the want of it, in an appropriate way. On the contrary, the statute discloses a fixed purpose to secure timely notice to all claimants of every material step in the proceeding and full opportunity to be heard in respect of all that bears upon the validity, extent, and priority of their claims. And while it is true, according to the concessions at the bar, that the sworn statements of claim are taken ex parte in the first instance, it also is true that they are then opened to public inspection, that opportunity is given for contesting them and that upon the hearing of the contests full opportunity is had for the examination of witnesses, including those making the statements, and for the production of any evidence appropriate to be considered. Thus the fact that the original statements are taken ex parte becomes of no moment. And while it is true that the state engineer's report is accepted as evidence, although not sworn to by him, it also is true that the measurements and examinations shown therein are made and reported in the discharge of his official duties and under the sanction of his oath of office, and that timely notice of the date when they are to begin is given to all claimants. The report becomes a public document accessible to all and is accepted as prima facie evidence, but not as conclusive. * * * Considering the nature of the report and that claimants may oppose it with other evidence, it is plain that its use as evidence is not violative of due process. *Meeker & Co.* vs. *Lehigh Valley R. R. Co.*, 236 U. S. 412, 430.

"The provision that the water shall be distributed in conformity with the board's order pending the adjudication by the court has the sanction of many precedents in the legislation of congress and of the several states, notably in the provision in the Interstate Commerce Act directing that the orders of the commission shall be effective from a date shortly after they are made, unless their operation be restrained by injunction. These legislative precedents, while not controlling, are entitled to much weight, especially as they have been widely accepted as valid. Although containing no provision for an injunction, the statute under consideration permits the same result to be reached in another way, for it declares that the operation of the board's order 'may be stayed, in whole or in part' by giving a bond in such amount as the judge of the court in which the proceeding is pending may prescribe, conditioned for the payment of such damages as may accrue by reason of the stay. It is not, therefore, as if the requirements were absolute. As has been seen the order is made only after adequate notice and full opportunity to be heard, and when made is, with reason, deemed prima facie correct. It relates to flowing water, to the use of which there are conflicting claims. Unless diverted and used the water will pass on and be lost. No claimant is in possession and all assert a right to take from the common source. In this situation we think it is within the power of the state to require that, pending the final adjudication, the water shall be distributed, according to the board's order, unless a suitable bond be given to stay its operation. Such a requirement is not arbitrary, does not take from one and give to another and is not otherwise offensive to a right conception of due process."

The proposed amendment relative to the determination of rights limits the ascertainment by the commission to rights by appropriation. If the commission were to act under the existing procedure it would be necessary to ascertain all *riparian rights,* as well as rights by appropriation, and, as provided in sections 32 and 36, such ascertainment, if pushed to a conclusion, would result in a decree by the court defining the riparian rights as well as those by appropriation. On most California streams there are so many riparian tracts upon which water is not now used that the aggregate acreage is often sufficiently large to require more than the full flow of the stream for irrigation purposes.

These areas are confined to a comparatively narrow irregular strip so that they could not be economically included in one or more projects. Under present conditions an appropriator may make his diversion and in time secure a prescriptive right against such lower riparian owners. If, however, these riparian rights were defined, as provided for in the present Water Commission Act, the appropriations could not be made without purchasing such riparian rights, which purchase would render the project not feasible. It is, therefore, thought wise to limit the ascertainment to rights by appropriation.

Still another reason for the adoption of this amendment is that the present California procedure provides (section 32) for the filing of an entirely new action after the ascertainment has been completed by the commission. This not only would necessitate a great loss of time and money, but also would involve questions of constitutionality if, as is provided in the section, the Attorney General should bring the action "in the name and behalf of the people of the state of California to quiet the title of the state of California or the people thereof." A provision somewhat similar was declared unconstitutional by the Supreme Court of Idaho.

DISTRIBUTION OF WATER.

An important part of the work of the State Water Commission should be the supervision of the distribution of the water of the state to those who are lawfully entitled to the use of such water. The owners of water rights will be greatly benefited by such supervision as it will insure delivery of the water to which they are entitled without frequent suits to enjoin interference with such delivery, and the state will be benefited not only by the decrease in litigation but also by the greater use that will be made of water if properly distributed. The only practicable way to insure such distribution appears to be through supervision by an administrative board such as the State Water Commission, with state-wide jurisdiction. Such a system has been found to work well in each of the several states where it is now in effect.

Section 37 of the present act provides that the commission shall have power to supervise the distribution of water, but fails to provide the necessary machinery for such supervision. An amendment has, therefore, been prepared to provide this machinery. This amendment, like the preceding one, is an adaptation of the laws of neighboring states where the laws have worked successfully and to the benefit both of the water users and the state.

WATER APPROPRIATIONS DETRIMENTAL TO THE PUBLIC WELFARE.

The new water legislation in other western states specifically authorizes the official or board having jurisdiction over new appropriations to reject those which are deemed detrimental to the public welfare. To avoid any questions as to the powers of the Water Commission in this regard, it is recommended that section 15 of the act be so amended as to definitely include such authority.

FEES AND CHARGES.

Section 23 of the Water Commission Act provides that a certain fee shall be paid upon the filing of an application and that upon receiving a license and annually thereafter a licensee shall pay a certain charge for the use of water. It appears, however, that the latter charge is unfair and tends to retard the development of water projects for the reason that it penalizes new projects inasmuch as competing projects which acquired water rights under the old law need pay no such charges. The interests of the state would be better served by the development due to the greater use of water than by the collection of a comparatively small annual sum for the use of water. A fourth amendment is therefore recommended to abolish the annual charge for the use of water and to revise the schedule of filing fees on a lower and more satisfactory basis.

WATER RIGHTS IN CALIFORNIA.

In Which the Principal Matter Discussed Is That of Riparian Rights.

By A. E. Chandler, Member of California State Water Commission.

The latest statement of the California Supreme Court regarding the relative position of the doctrine of riparian rights and that of prior appropriation in this state is given in the following extract from *Duckworth* vs. *Watsonville Water & Light Company* (150 Pac. 58).

> ''These decisions show that while an appropriation or diversion made upon lands of the United States gives the appropriator or diverter a right to the water as against the United States it does so solely because by the act of congress of July 26, 1866 (14 U. S. Stats. 253), the United States declared that such diversion, if recognized by local laws, should be effectual to confer upon the diverter the riparian rights in the stream pertaining to the land of the United States abutting thereon, that it gives no right as against other landowners, that this does not take place upon the theory that the water is held by the United States for public use, but because, as proprietor of the land, the United States, by that act, granted a part of its property in its land to such diverter. Also they show that the appropriator under the Code may obtain a similar right as against riparian rights of the state pertaining to any lands which the state may own along the course of stream; but that this right may be thus acquired, solely because the state in section 1410 of the Civil Code has so declared and that this declaration binds the state as to its proprietary lands, but does not affect lands of other persons or water rights pertaining to such other lands, and that, except its riparian rights pertaining to lands which it owns bordering upon non-navigable streams, the state has no right to the waters thereof and, consequently, can not dispose of any other rights.''

The above statement leaves no doubt of the legal inferiority of the doctrine of prior appropriation in California. The economic superiority of the doctrine of appropriation, however, is now so generally recognized that it need not be argued here. To illustrate the unfitness of the riparian doctrine it is sufficient to but refer to the words of the Colorado Supreme Court in an early case (*Coffin* vs. *Left Hand Ditch Co.*, 6 Colo. 443):

> ''Imperative necessity, unknown to the countries which gave it (the riparian doctrine) birth, compels the recognition of another doctrine in conflict therewith.''

Similar language was indulged in by the supreme court of the other strictly arid states in abrogating the doctrine of riparian rights, and the states now standing with Colorado in the exclusive recognition of the doctrine of prior appropriation are Arizona, Colorado, Idaho, Nevada, New Mexico, Utah and Wyoming.

That the doctrine of riparian rights is still upheld in the semihumid states of the west is due in a very large measure to the California case of *Lux* vs. *Haggin* (69 Cal. 255) decided by a divided court of four to three. The decision was written at too early a date for a majority of the court to appreciate the absolute necessity of the doctrine of prior appropriation, as is shown by the following quotation from the opinion:

> "It does not require a prophetic vision to anticipate that the adoption of the rule, so called, of 'appropriation' would result in a monopoly of all the waters of the state by comparatively few individuals."

In striking contrast to the above view is the present attitude of the California Supreme Court towards the doctrine of prior appropriation, as is shown by the following quotation from the recent case of *Hufford* vs. *Dye* (162 Cal. 147):

> "It is the well settled law of this state that one making an appropriation of the waters of a stream acquires no title to the waters but only a right to their beneficial use and only to the extent that they are employed for that purpose. His right is not measured by the extent of his appropriation, as stated in his notice or by his actual diversion from the stream, but by the extent to which he applies such waters for useful or beneficial purposes. Beyond that his appropriation or diversion of more than can be applied by him gives him no right to the excess, and this is subject to appropriation by any other person who may use it for similar beneficial purposes."

It must be emphasized at this point that the doctrine of riparian rights was abrogated *by the courts* in the strictly arid states, enumerated above, and not by legislative enactment or constitutional provision. This statement is subject to two qualifications, however. In Nebraska it has been held in the case of *Crawford* vs. *Hathaway* (67 Neb. 325) that the state irrigation act of 1889 abrogated the common law rule of riparian ownership and substituted that of prior appropriation, but that said legislation could not and did not have the effect of abolishing riparian rights which had already accrued, but only of preventing the acquisition of such rights in the future. The Supreme Court of Oregon in *Hough* vs. *Porter* (51 Ore. 318), in interpreting the desert land act of March 3, 1877, held that public lands entered after the date of said act were accepted with the implied understanding that (except as to water for domestic purposes) the first to appropriate and use the water for the purpose specified in the act should have the superior right thereto.

If the supreme courts of the other semihumid western states were to follow the Nebraska Supreme Court they would declare that no riparian water right attached to any lands entered after the passage of the state act regulating the appropriation of water. The first California statute governing the appropriation of water was that of March 21, 1872, a section of which (section 1422 of the Civil Code) contained the following words: "The rights of riparian proprietors are not affected by the provisions of this title." This section was interpreted by the California Supreme Court in *Lux* vs. *Haggin*, wherein it was held:

> "Section 1422 of the Civil Code is protective, not only of riparian rights existing when the code was adopted, but also of the riparian rights of those who acquired a title to land from the state, after the adoption of the code and before an appropriation of water in accordance with the code provisions."

At the first legislative session (1887) after the decision of *Lux* vs. *Haggin*, section 1422 was repealed with the proviso, "that the repeal of this section shall not in any way interfere with any right already vested." This action opened the way for a very sound appeal to the California Supreme Court to follow the Nebraska Supreme Court, but, so far as I know, no very earnest effort has been made along this line.

As the Oregon Supreme Court in *Hough* vs. *Porter* dealt with a congressional statute, there is an opportunity for the supreme courts of those states still recognizing the riparian doctrine to follow the Oregon court and to hold that no public land entered since March 3, 1877, has a riparian water right. In *Still* vs. *Palouse Irrigation and Power Co.* (117 Pac. 466) the Supreme Court of Washington considered the rule laid down in *Hough* vs. *Porter* but refused to follow it, holding that "the act itself manifestly relates only to the reclamation of desert lands." The Supreme Court of the United States in *Boquillas Cattle Company* vs. *Curtis* (213 U. S. 339) had its attention called to *Hough* vs. *Porter*, but, as on other grounds it held that the riparian doctrine was not applicable in Arizona it simply stated,

> "The opinion that we have expressed makes it unnecessary to to decide whether land in the arid regions patented after the act of March 3, 1877 * * * are not accepted subject to the rule that priority of appropriation gives priority of right by virtue of that act construed with Rev. Stat. 2339. The Supreme Court of Oregon has rendered a decision to that effect on plausible grounds."

Passing to the lateral limits of riparian lands—that is, to the extent to which the riparian right reaches from the stream—no western supreme court has done more than the Supreme Court of California to restrict such limits. Owing to the Spanish grants in this state there have existed in a single ownership far larger tracts than is the condition in other states—that is, so far as the early history of the chain of title is concerned. With the single exception of an Oregon case the courts have restricted the riparian lands to the drainage area. These limits have been further restricted by the California Supreme Court in *Bochmer* vs. *Big Rock Irr. Dist.* (117 Cal. 27) to the original tract granted by the government, through part of which the stream flows, and this area would ordinarily be but 160 acres in the case of homestead entries and 320 acres in the case of desert land entries. By the principle laid down in *Anaheim Union Water Co.* vs. *Fuller* (150 Cal. 331) the lateral limits have been still further restricted to the smallest tract at one time in a single ownership.

The Spanish grants now in a single ownership must eventually be subdivided and held in small tracts. There is no doubt that as between the subdivisions within the original grant the conveyances can be so drawn that the riparian right of the original grant may be prorated among the subdivisions. The California Supreme Court, however, has not yet decided whether such a subdivision not touching the stream possesses a riparian right as against water claimants outside of the original grant. Here lies the possibility of a still greater restriction of lateral limits.

Numbers of suggestions have been made regarding methods for limiting or abolishing the riparian right by legislation. The present California Water Commission Act provides, in section 11, that the nonapplication of water to beneficial purposes upon riparian lands for any continuous period of ten successive years shall be deemed to be conclusive presumption that the use of such water is not needed upon said lands. This provision flies in the face of the principle, so often reiterated, that the riparian right is not created by use and it does not cease with disuse. The California Supreme Court itself, however, by way of dictum only, has said:

> "It may well be that there is room for an even need for legislation which will require riparian proprietors to exercise their irrigation rights in the use of water within a limited period, or to be decreed to have waived these rights. Other similar legislation making for the general good will readily occur to one's mind. But it is not the province of this court to legislate, and it would be abhorrent to justice now to say to an upper riparian proprietor, who has rested in security upon the rights which this court has over and over again declared to be his, that he has lost those rights through no fault or failure of his own, but simply because he has not seen fit to use the waters upon his riparian land. We take it that the legislature itself would be slow so to decree without giving the riparian proprietor an opportunity to make a beneficial use of the waters. We are asked to do this without giving him such an opportunity. This would be equivalent to this court erecting a statute of limitations against an upper riparian proprietor and in the same breath decreeing that it had barred all his rights."
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> (*Miller & Lux* vs. *Enterprise, etc.,* 47 Cal. Dec. 1, 7.)

It seems certain that legislation limiting the time within which action may be brought by a riparian owner against appropriators will be upheld as valid. The prescriptive period at present in California is five years. Attempts were made at the last session of the California Legislature to further limit this period but they were not successful.

The California Supreme Court has said again and again that the riparian owner may restrain a diversion by an appropriator without showing damage, upon the broad doctrine that the taking itself is an interference with his freehold which he is entitled to restrain lest it ripen into a prescriptive right. Attempts have been made in the California Legislature to so amend the Code of Civil Procedure that a clear showing may be made by the defendant, in such injunction cases, of the damage, if any, which the riparian owner will suffer on account of the proposed appropriation. As no one except the most unreasonable of riparian owners should object to such legislation, it undoubtedly will be adopted in the near future.

The early cases in California dealing with the occupancy of mineral lands and the use of water, in connection therewith, recognized the doctrine of prior appropriation exclusively, as the parties in such cases were strangers to the title—that is, they were but trespassers upon the public lands. As the early custom regarding mineral claims was to post a notice upon such claim the same practice became fixed in appropriating water, and such notices were recorded long before statutes providing therefor were enacted. The basic principles of the doctrine of prior appropriation were likewise established by the courts before there were any general statutes upon the subject. The California statute of 1872 (sections 1410–1422 of the Civil Code) was but declaratory of the principles established by the courts.

Statutes similar to the California statutes were adopted in practically every western state. The first state in any way to make an advance upon this legislation, so far as the initiation of appropriations is concerned was Wyoming, where, due to the able direction of Elwood Mead (now of the University of California), a very complete irrigation code was adopted in 1890. Statutes similar to the Wyoming statutes governing appropriations were adopted in Nebraska in 1895, in Utah and Idaho in 1903, in Nevada, North Dakota, Oklahoma and South Dakota in 1905, in New Mexico in 1907, in Oregon in 1909, in California for power purposes only in 1911, and finally in California for all purposes in 1913. The last California act, however, was withheld by referendum and became effective December 19, 1914.

Under the old California statutes no public offices had jurisdiction over appropriations. It was only necessary to post a notice, record it and to begin the work within a specified time and prosecute it with reasonable diligence to completion. It was this question of reasonable diligence in regard to which new legislation was most needed. Under the new statutes, as first adopted in Wyoming, a central office, generally the State Engineer (in California, the State Water Commission), has jurisdiction over all new appropriations. When it is found that an application will not conflict with existing rights and will not prove detrimental to the public welfare, it is approved by the central office and, in the approval, a time is fixed within which construction must begin, within which construction must be completed, and within which the water must be applied to beneficial use. The appropriator, therefore, knows before spending a dollar in construction the exact time within which he must consummate the several steps incident to his work.

There is an impression, even among the supposedly well informed, that under the old statute all that one had to do to maintain the legality of an appropriation was to put a wheelbarrow and pick and shovel man upon the job and keep him there through the years. Such an idea has never been reflected in the decisions of any supreme court regarding the exercises of reasonable diligence in water appropriations. The newer statutes generally fix five years as the time within which the construction of even the very largest works must be completed, although in a number of states discretion is given to the central office to extend this time for reasons deemed by it sufficient.

Unfortunately for themselves, there are a number of individuals scattered throughout California and other western states, who through the intervening years, have been employing the pick and shovel men as above suggested. At the rate they are working, it would take several decades to complete the necessary construction. One of the leading cases dealing with reasonable diligence is *Ophir Mining Company* vs. *Carpenter* (4 Nev. 534), in which it is said, "diligence is defined to be the 'steady application to business of any kind, constant effort to accomplish any undertaking.' The law does not require any unusual or extraordinary efforts, but only that which is usual, ordinary and reasonable." An apt reflection upon many of our own instances of so-called reasonable diligence is contained in the following words of the court in the Ophir case: "Rose during this time may have dreamed of his canal completed, seen it with his mind's eye yielding him a great revenue; he may have indulged the hope of providential interposition in his favor; but this can not be called a diligent prosecution of his enterprise. Surely he could hardly have expected to complete it during his natural life by such efforts as were made through this period."

Under section 12 of the California Water Commission Act, one who has initiated his appropriation prior to the passage of the act may apply to the Water Commission to have the time fixed within which the water appropriated must be applied to beneficial use. In acting upon all applications under this section, the California Water Commission will favorably consider only those appropriations where work has been carried on in a businesslike way, and will reject the application in those cases where only trail building or survey work has been carried on for a number of years.

The idea is also current that lack of means is an excuse for lack of reasonable diligence in the construction work. Long ago the California Supreme Court in *Mitchell* vs. *Canal Co.* (75 Cal. 464) disposed of this question in the following words:

> "The parties prosecuting the work must have the ability to complete the work in a reasonable time, and pecuniary inability to complete the work in a reasonable time can not be urged as an excuse for not prosecuting the work."

There is also a view extant in California, even among attorneys, that water can not be appropriated for diversion from one watershed into another. A description of the various irrigation systems of the state would contain great numbers of projects where the water has been so diverted. That such diversions are legal, so far as any appropriation may be deemed to be legal, is well illustrated by the following words from the opinion of the California Supreme Court in the *Miller-Lux* vs. *Fresno Flume Co.* (158 Cal. 626):

> "In *Miller* vs. *Bay Cities Water Co.*, 157 Cal. 256 (107 Pac. 115) the principle is clearly recognized and declared that an appropriator of water may divert for use to any point beyond the watershed any portion of the waters of the stream which serves no useful purpose either to the riparian owners, or in supplying the underground stratum, or such waters as are in excess the quantity necessary for such purposes."

The present California Water Commission Act contains a certain provision not found in the irrigation statutes of any other western state. It deals with the question of the capitalization of the water right. Until very recently a great number held that the water right in California and other states belonged to the landowner and not to the canal company. The Supreme Court of the United States, however, in *San Joaquin and Kings River Canal and Irrigation Company* vs. *Stanislaus County* (233 U. S. 454) has held to the contrary. Section 20 of the California Water Commission Act provides that the water right granted by the State Water Commission can never be capitalized for either rate fixing purposes or for purposes of sale to a political unit. As the best modern idea in granting franchises for any purpose is to fix them for an indeterminate period in such a way that they can not be capitalized, the other western states should follow the lead of California in this respect.

The new irrigation statutes, just like the original California statutes of 1872, so far as the fundamental principles of water law are concerned, are but declaratory of those laid down by the courts. Anyone of much experience in business matters well remembers the time when the typewriting machine was first introduced, when the stenographer was first employed, when the various bookkeeping and auditing systems, now considered so necessary in our business life, were first developed. The modern irrigation statutes simply introduce a system comparable to such innovations aiming for business efficiency. Instead of allowing an appropriator to go ahead blindly, as under the old statutes, and trust to luck that he would not be engaged in litigation over the exercise of reasonable diligence or on account of deficient water supply, his work so far as the time element is concerned is placed under the central office from start to finish, and, in cases where it is certain no unappropriated water remains, he is not allowed to proceed. The very best comment which can be made upon this new legislation is that, no matter how bitterly contested it may have been when first proposed, no serious attempt to abolish it has ever been made in those states in which it has been adopted.

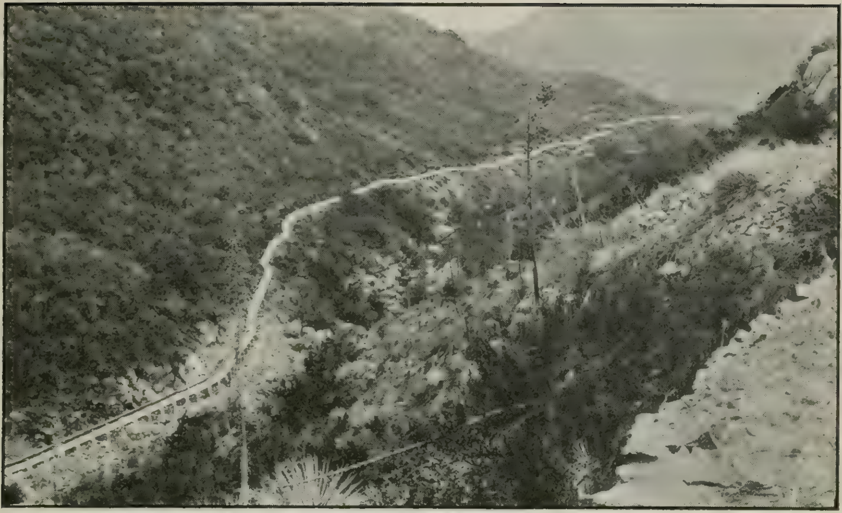
This paper deals largely with riparian rights. The justification of such treatment is due to the fact that the riparian doctrine is legally the one great obstacle in the way of the best development of our water projects. The normal summer flow of practically all of our streams was long ago applied to beneficial use. To expand, storage reservoirs must be constructed, but in numerous cases the attitude of riparian owners makes such construction not feasible financially. As, except in the case of the few remaining Spanish grants, it is not practicable to construct projects for the irrigation of riparian lands exclusively, the riparian owner himself is injured by his fellow obstructionists.

The California Supreme Court in its treatment of the law of percolating waters has adopted a policy of true conservation. In *Burr* vs. *Maclay Rancho Co.* (154 Cal. 428) it said:

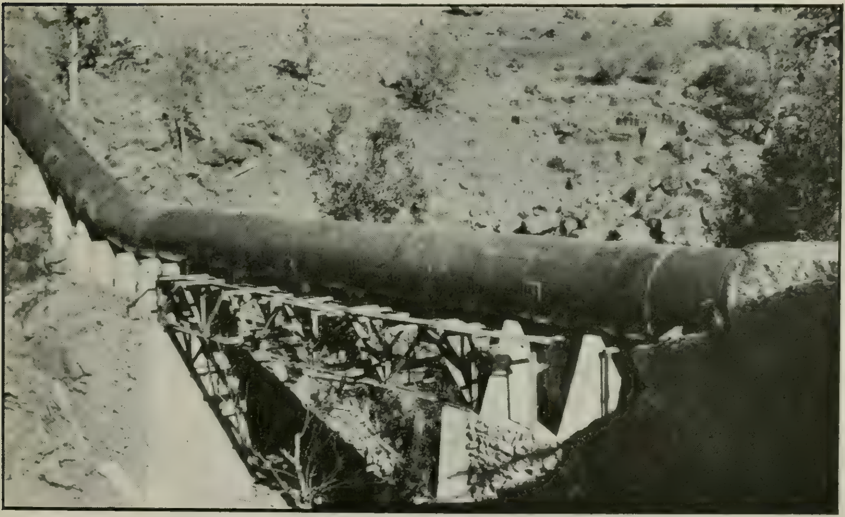
> "It is not the policy of the law to permit any of the available waters of the country to remain unused, or to allow one having the natural advantage of a situation which gives him a legal right to water to prevent another from using it, while he himself does not desire to do so. The established and settled law of riparian rights in running streams, which have become vested rights, may compel a different rule with regard to such waters in some instances, but these rules of law do not, of necessity, control rights in percolating waters."

To the man whose whole property and civic interest is in a riparian tract, the doctrine of riparian rights is necessarily an admirable one. To the riparian owner, who is using his water and is interested in other land, to the irrigation districts, to the mutual and commercial irrigation companies, to the government projects, to the cities which are looking for a water supply, in short, to all who are part of the broader development, the doctrine of prior appropriation offers the way. It is, therefore, in the interest of all of these that we should try every way that other states have used and that we ourselves can suggest for casting off, as far as is lawful, the burden of riparian rights.

PLATE II.



Methods of conducting water—concrete flume of Mt. Whitney Power Company on Middle Fork, Kaweah River.



Methods of conducting water—the steel pipe line.

THE WATER SUPPLY OF CALIFORNIA.

Something of the Water Available for the Different Purposes.

In order to have a correct idea of the water supply of the state in relation to the demands which are now and will in the future be made upon it for agricultural, power, municipal, domestic and other uses, the size of the state, as well as the wide range and variation in its climatic and topographic conditions, should be kept in mind.

The great length of the state north and south, extending over ten degrees of latitude, from a humid area in the northwest corner to an arid area in the southeast, with the diversity of conditions from the coast to east caused by the two parallel mountain ranges traversing its length, creates a variety of conditions in the use and application of water which are unusual and complex. The scarcity of practical reservoir sites as well as the long growing season prevailing throughout adds to the duty required of the waters available for all uses when the development of the state requires that these waters shall be put to the greatest and most effective use. This realization on the part of the people of the state has caused it to assume a more complete supervision of the conservation, appropriation and use of its public waters.

WATER AVAILABLE FOR IRRIGATION.

(From Bulletin No. 254, Irrigation Resources of California and Their Utilization.)

"The total area of irrigable agricultural land in the state of California found in the zones of irrigation water supplies, which includes all of the valley lands, the rolling plains of the Great Valley and the arable portions of the Sierra foothills up to about 3,000 feet elevation, and all of the plateaus and desert lands to which some irrigation water supplies are available, is approximately 22,000,000 acres, of which a little over 3,000,000 acres are irrigated and about 10,000,000 are estimated as the area to be ultimately irrigated. Of the total irrigable areas found, about 28.5 per cent are in northern California, 44 per cent in central California and 27.5 per cent in southern California. Of the total irrigated area, about 15 per cent is in northern California, 61 per cent in central California and 24 per cent in southern California. Of the areas it is estimated may ultimately be irrigated, about 35.5 per cent are in northern California, 44.5 per cent in central California and 20 per cent in southern California.

"The mean annual flow of the major surface streams of California, in round numbers, approaches 60,000,000 acre feet, or enough to cover all the irrigable land of the state to a depth of nearly three feet.

But this water does not all run where or when most needed for supplying the deficiencies in soil moisture in the cropped or cultivable fields, nor is the mean flow of streams the flow that measures possibilities of utilization except as storage is available to equalize all of the years, which is the case, so far as yet known, with a relatively few streams only. Therefore, the quantity of water available for irrigation is very much less than the total quantity carried in the streams. If an average of two acre feet per acre per year were eventually to be used on the entire area it is estimated may be ultimately irrigated, less than one-third of the mean annual flow for all the state would be required. But, as stated above, the distribution of this water is not equalized, as, for instance, in the Sacramento Valley all of the plains and adjacent arable Sierra foothills would receive two feet of water annually and there would still be left two-thirds of the mean outflow of the Sacramento River, as shown by records taken at Collinsville during a period of a few years. On the other hand, if the San Joaquin Valley and its plains and adjacent arable Sierra foothills should be likewise watered, it would require about a third more water than now enters the San Joaquin Valley in mean years. If all the irrigable lands listed for southern California were to be covered to a depth of only 1.5 feet, the full mean flow of all the streams of southern California would still lack 3,000,000 acre feet of being enough to irrigate the land. These figures do not make any allowance for seepage losses in transit.''

WATER AVAILABLE FOR POWER DEVELOPMENT.

Next to the state of Washington, California has the greatest potential hydroelectric resources of any state in the union. The three Pacific coast states, Washington, Oregon and California, have 42 per cent of all the available water power in the United States. In California the total amount of power used plus the capacity of plants now under construction is only about one-fifth of the state's minimum and one-tenth of its maximum water power resources. As electricity is fast becoming adapted to every use for which other fuel has been used in the past, it may be seen that the greater adaptability of this commodity to these uses will conserve our forests and natural oil for other uses and keep millions of dollars within the state which now goes to great foreign corporations for coal and also result in great saving to the people in final reduced costs for light, heat and power. When it is realized that all of the water in California not yet adapted to use comes directly under the authority of the State Water Commission, some idea of the importance of the commission's work may be seen. Mr. F. H. Fowler, district engineer of the United States Forest Service, has furnished some figures which are interesting in relation to the water resources for power in California.

The most comprehensive estimate yet completed of the total theoretical horsepower available from the streams of the United States was made by the United States Geological Survey in 1908 and was later revised and corrected by Commissioner of Corporations in his report "Water Power Developed in the United States" in 1912. The computations were based on 90 per cent efficiency for the powerhouses, and the utilization of 90 per cent of the total fall available on stretches of the streams that were judged to be susceptible of power development.

According to estimate of the Survey, the streams in the United States with aid or storage will be able to produce at least 200,000,000 horsepower when they are completely developed. Without storage they will be capable of development to the amount of 53,905,000 horsepower on the basis of the maximum mean monthly flow available during the six lowest months of the year, and 27,943,000 horsepower on the maximum flow available during the two lowest weeks of the year.

No segregation of California's portion of total available horsepower with storage for the United States can be obtained, but the power available in California on the six months basis is 7,818,000 horsepower, and the power available on the basis of the lowest two weeks period is 3,424,000 horsepower. Corresponding figures for the three Pacific coast states—Washington, Oregon and California—are 23,078,000 and 11,504,000. The major portion of the power available in California is from streams in the Sacramento and San Joaquin river drainages, which find their outlet to the ocean through San Francisco Bay. The figures for these two drainages on the two above assumptions are 7,720,000 and 3,179,000 horsepower.

As of December 1, 1916, there are in operation on California hydroelectric transmission systems, the following hydroelectric plants:

Drainage	Number of plants	Total installed capacity of machinery
Pacific coast drainage north of San Francisco Bay	7	24,321
Pacific coast drainage south of San Francisco Bay	11	18,304
Great Basin drainage from east slope of Sierra	17	57,580
Sacramento River drainage	20	239,725
San Joaquin River drainage	20	261,936
Totals	75	601,866

The above figures include several small installations which, while actually located in Oregon or Nevada, are connected to transmission lines partly in California. In addition to the hydroelectric plants there is also an installed capacity of approximately 377,000 horsepower in steam plants, operated as auxiliaries and reserves on the hydroelectric systems.

The comparison between the use of water and of steam for electric power is shown as follows:

The plants enumerated above produced, during the calendar year 1915—the latest for which figures are available—the following amounts of power:

Hydroelectric	1,826,462,000 kilowatt hours
Steam electric	315,016,000 kilowatt hours
Total steam and hydroelectric generated—all hydroelectric systems	2,141,478,000 kilowatt hours

This is equivalent to a continuous output of 328,000 horsepower throughout the year, and as the mean output for the year is probably about .6 of the output at the moment of maximum demand, it is probable that the maximum demand, or peak (had all the companies been operating as a single system) would have been very close to 550,000 horsepower.

The most important plants now under construction are:

Pacific Gas and Electric Company—	
Wise Plant	16,750 horsepower
Pacific Power Corporation—	
Rush Creek Plant, Mono Lake Basin (second unit)	6,700 horsepower
California-Oregon Power Company—	
Klamath River Plant	67,000 horsepower
Pacific Light and Power Corporation—	
Additions to Big Creek Plants Nos. 1 and 2	70,000 horsepower
Grand total	160,000 horsepower

The most important proposed developments not yet actually under construction are those of

Great Western Power Company—	
Feather River Developments	400,000 horsepower
Pacific Gas and Electric Company—	
Bear River Developments (exclusive of part of Drum development already constructed, and Wise and Halsey Plants)	100,000 horsepower
Pacific Light and Power Corporation—	
San Joaquin Developments (exclusive of present Big Creek Plant and additions thereto, under construction)	98,000 horsepower
Mt. Shasta Power Corporation—	
Pit River Development	160,000 horsepower
Grand total proposed installed capacities of plants not yet under construction	758,000 horsepower

While there is a wide margin between the total estimated potential powers, and the installed capacities of plants already constructed, under construction, and proposed, the three latter classes will completely develop most of the sites that are highly attractive from a commercial standpoint.

City of Los Angeles Power Development.

Prior to the organization of the present State Water Commission, the city of Los Angeles had made applications to the previous water commission as part of a plan for a municipal supply of water and power combined under public ownership by the city.

Under section 12 of the present act, Los Angeles applied to this commission to prescribe twelve years as the time within which the full amount of water appropriated should be applied to useful or beneficial purposes, to that extent bringing the project under the view of the present commission. The Los Angeles aqueduct, providing for a domestic water supply, has been virtually completed.

As stated by the Board of Public Service Commissioners of Los Angeles, the project is designed, first, to convey to the city a continuous flow of 400 second feet of water from the Owens River watershed, starting at a point north from the town of Independenec and about two hundred and fifty miles distant from Los Angeles; and, second, to provide for the generation of hydroelectric power from the fall of the water in the aqueduct at four different points and from the fall of the waters of certain natural streams in the Owens River and Mono Lake watersheds.

The power feature of the project, as proposed and planned, consists of four plants, located along the aqueduct, namely: the San Fernando plant, of 9,000 horsepower capacity, 25 miles from the city; the San Francisquito No. 2 plant, of 44,000 horsepower peak capacity, 40 miles from the city; the San Francisquito No. 1 plant, of 69,000 horsepower peak capacity, 47 miles from the city, and the Haiwee plant, of 6,000 horsepower capacity, 162 miles from the city. The first and last of these are constant flow plants, and the two in the San Francisquito Canyon are variable flow plants, with regulating reservoirs above No. 1 plant and below No. 2 plant, and with a waterway capacity between these reservoirs of 1,000 second feet, or two and one-half times the capacity of the aqueduct.

In addition to the above, the power system of this city embraces three plants on Cottonwood Creek, in Inyo County, totaling 10,000 horsepower, 185 miles from the city; one plant on Division Creek, of 800 horsepower capacity, 225 miles from the city; three plants on Big Pine Creek, totaling 12,000 horsepower maximum, or about 8,000 horsepower of reliable power throughout the year, 240 miles from the city; three plants along the Owens River gorge, below the city's

Long Valley reservoir site, 265 miles from the city, totaling 42,500 horsepower, with the natural flow of the river equated, and additional power, amounting to about 37,500 horsepower, to be developed at the three plants along the Owens River gorge, by the diversion of water from the Mono Lake watershed, and at plants on Rush and Levining creeks. All plant capacities are given as at the plant switchboard.

The power system includes, in addition to the reservoirs already referred to, the Haiwee reservoir, situated just above the Haiwee plant, and which has been completed, and has a capacity sufficient to supply the full flow of the aqueduct for three months; a reservoir in Long Valley, in which may be stored something like one year's supply, and storage reservoirs on all of the creeks mentioned, except Division Creek.

The plan of the transmission system embraces four three-phase circuits, two on each of two steel tower lines, and the complete power system, as outlined, would deliver, at the city, 200,000 horsepower, peak capacity, of reliable hydroelectric power, at a total cost approximating $22,000,000, including the full cost of the proposed diversion from the Mono Lake watershed.

The city has expended approximately $24,500,000 on the construction of the aqueduct system and $3,500,000 on surveys and preliminary engineering work in connection with the complete power system, and on works for the development of 37,500 horsepower in San Francisquito Canyon and the transmission of the same to the city. The city has also authorized $6,500,000 of additional bonds for the purpose of completing the generating works under construction and providing a system for the distribution of the power within the city.

The portion of the system now being constructed conforms to the plan of the complete system, as above outlined, and its actual cost, to date, has been $120,000 more than it would have been had the city contemplated only the use of the power opportunities along the aqueduct itself.

As a further development of its proposed power system, the city of Los Angeles filed with this commission on October 23, 1916, an application for permission to appropriate 200 cubic feet per second of the waters of the south fork of the Kern River in Tulare County. It is proposed to develop 18,000 theoretical horsepower at an estimated cost of $1,500,000.

WATER FOR MINING IN CALIFORNIA.

California, one of the foremost states in the Union in the variety and production of minerals and mineral substances, yields commercially a greater number and variety of mineral products than any other state.

There were forty-nine different mineral substances reported during 1915, and of fifty-eight counties in the state all but two contributed some mineral product. These products, rated in the order of their value, consisted in part of petroleum, gold, copper, cement, quicksilver, tungsten concentrates, magnesite, manganese and chromite. All of these, with the exception of petroleum, indicated a marked increase in volume and value as compared with 1914, due in a measure to the European war, which has created a demand for a larger output at better prices. As an index to California's importance as a producer of mineral products the total value of her output ($93,663,369 for 1915) is surpassed by but four states, they being the great coal and iron producers east of the Mississippi River. In the production, reduction, recovery and manufacture of these mineral substances water, and in some instances, large volumes of it, is required.

With the discovery of gold at Coloma, the miners learned that water was absolutely essential for mining of the auriferous gravels, and in the reduction of gold-bearing ores, as well as for the concentration of their precious content, so rules and regulations for the right of the use of water was coincident with the discovery of gold. The rules of common law relative to the rights to water and use of water were unsuited to the wants of California, so primarily the miners were governed solely by the local laws, customs and rules of miners adopted in the various camps or diggings.

As indicated elsewhere in this report applications for the use of water for mining, and the generation of power for mining purposes, is comparatively a small percentage of the applications filed with the commission. This is due to two causes: first, that the mines and mining companies have been operating for many years and have acquired title under the law of appropriation; second, for the generation of power many operators have installed or substituted electricity for water or steam, purchasing same from the power companies.

The value of the mineral output of this state for the year 1916 will exceed that of 1915—the only decrease being in that of gold, due to the strike of miners in Amador County, the increased cost of labor and supplies, and consequently decreased purchasing power. It would be folly to attempt to set a limit of maximum mineral production for California, because the mineral resources are so extensive and have been so slightly developed along many lines.

It is not probable that water will be used to as large a degree according to the scope of operation or in as large a volume in the mining industry in the future as in the past, except in the generation of power.

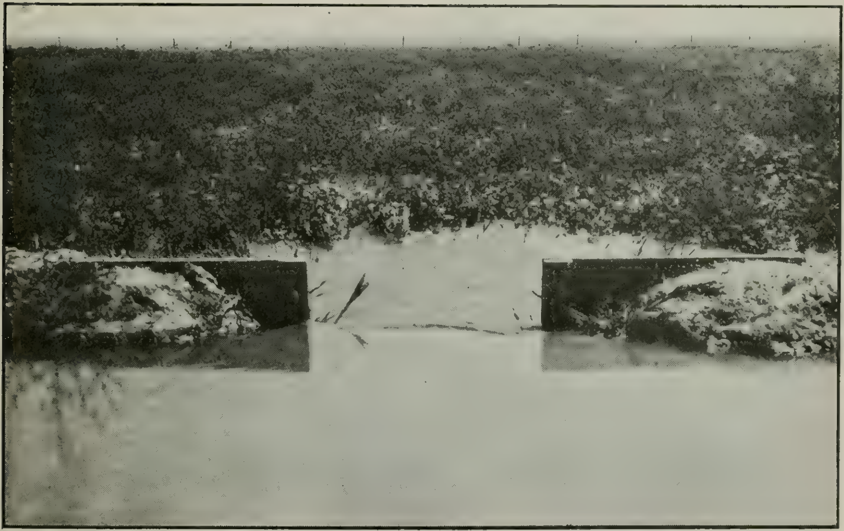
NEW USES FOR ELECTRIC ENERGY.

New phases of the use of electric energy will enable the state to add ultimate wealth in property and prosperity. Just a few of them may be mentioned. The world's supply of nitrate comes from Chili, and it is predicted that this supply will soon be exhausted. The countries of Europe are rapidly establishing nitrate fixation plants whereby nitrogen is extracted from the air by means of electricity. Chilean nitrate is only 12 per cent efficient, while the nitrogen extracted from the air is 60 per cent active. The United States imports 625,000 tons of nitrate annually at a cost of $21,000,000, of which $8,000,000 is export duty paid to Chili. It has been calculated that the whole amount necessary for the United States could be manufactured in California by the use of 1,000,000 electrical horsepower. This state alone uses $2,250,000 worth of Chilean nitrate annually. This product is used both for the manufacturing of explosives and for fertilizer. Statistics are given to show that in Germany by the use of 2,000,000 tons of nitrate 63,000,000 additional tons increase in crops was secured.

The manufacturing of electrochemicals and the ultimate use of the electric furnace in the manufacture of iron and steel instead of with coke and coal give an indication of the possibilities that lie in the water power resources of the state and the subsequent importance of the duties of this commission in regard to the appropriation and administration of water affairs in this connection.

PLATE III.

Headwaters of South Fork, San Joaquin River—water stored on the mountain tops and between the trees in the form of snow, for use in the lower country in the rainless season.



From the snow to the soil.—This shows a closer view of the check gate.

THE DUTY OF WATER

Knowledge of the Proper Use of Water Has Become an Extremely Important Matter.

The Water Commission considers the duty of water of utmost importance, especially in the future conditions of water use in the state. In the earlier history of water diversions there was plenty for all users, but conditions have changed until now the practice of conservation has become absolutely necessary, and the excessive use of water by some persons results in a scarcity for others. In addition to this, land on which water is used excessively is not only injured, but adjoining lands may suffer.

The Water Commission has attempted to set a standard for the duty of water as it applies to ordinary culture. This does not refer to unusual crops such as rice, which requires a greater amount, nor to certain characters of soil which may necessitate a larger application for irrigation purposes. For ordinary uses the commission has fixed upon a maximum allowance of one second foot for 80 acres of land.

In a paper on the "Duty of Water," prepared for the Water Problems Conference, Mr. A. Griffin, engineer of the South San Joaquin Irrigation District, where the soil is mostly of an open nature, says in part:

"The expression 'duty of water' is somewhat loosely used and has reference to the water applied to crops by irrigation to promote growth. As ordinarily used it is variously expressed by a ratio, showing the amount of water per acre, or the number of acres per cubic foot per second, or the depth over the land. The word 'duty' expresses an obligation and in my judgment the expression 'duty of water' should be used to express the most efficient use of water and the expression 'use of water' to express the actual use.

"Fundamentally, the water requirement of a crop is equal to the amount transpired by the plant plus the amount retained by the plant and both these factors may vary for different crops or for the same crop grown under different conditions. The water required is supplied by rainfall, by water percolating in the soil or moving in the soil under the influence of capillarity from underground sources, by the moisture in the air and by irrigation or artificial application of water.

"In practice water is applied to crops by practical methods and at practical intervals, both adapted as far as can be, or so far as is necessary to the conditions of soil, climate, water-supply, kind of crop, etc., to supply that part of the water requirement not supplied by natural means. The most efficient use of water under such conditions might properly be termed the duty of water, the efficiency to be measured by the dollar standard.

"Under irrigated conditions the water requirement of the crop is ordinarily supplied mainly by irrigation and rainfall, which is each in itself a variable quantity, but when the position of the ground water is favorable the amount of water supplied by percolation or capillarity may become of preponderating importance. The use of the term 'duty of water' is sometimes further confused by considering it as covering the rainfall or other sources of water as well as irrigation, but I shall confine the meaning of either 'duty' or 'use' of water to the water artificially applied.

"Both the duty and use of water are very variable, varying with the kind of crop, its conditions, the rainfall, humidity, sunshine, temperature, soil, ground water, evaporation, quantity available, cost of water, manner of paying for water, crop yields, prices, etc. The most efficient use of water when water is plentiful and land is scarce is not the most efficient use if water is scarce, relatively, to the land tributary to it. Both the duty and the use of water are then changing constantly as the factors mentioned above change. It is therefore impossible to determine either the duty or use of water except possibly for a certain date or a limited period. This situation is fundamental and no amount of study or investigation can overcome it, although study and investigation have been very useful and continued work is desirable to increase our knowledge and comprehension of the subject of the use of water.

"As the subject of the use of water becomes better and more generally understood and with the increasing economic pressure there is a growing tendency to use water more economically and efficiently. Contrary to general opinion, a more efficient use of water will frequently mean a more liberal use of water, while in other cases it will mean a more sparing use. While the duty of water is necessarily variable and it will never be possible to fix the duty, either for a crop or a locality, it is frequently possible by observation of the soil and the crop and by moisture measurements to determine that too much or too little water is being used in any particular case. Measurements of the amount of water used in any locality and investigations of the water requirements of crops and the unavoidable inefficiencies in supplying them by irrigation will permit the duty of water to be bounded by certain outside limits and a more general dissemination of knowledge obtained and the principles established will become an educational factor of great importance in the approaching of the duty of water and the work done along these lines to date has already been of very great educational importance.

"The most efficient use of water consists of so using the water avail able as to produce the greatest net returns to the individual or to the community or to the state, and it is well to recognize here that the interests of the two do not always coincide. The best method to secure an efficient use of water is through continued educational work of a practical nature carried on among the people who use water, by themselves and by investigators who approach the subject with a clear knowledge of just what constitutes an efficient use of water. I believe that considerable work of this nature has failed in producing good results because the men back of it had a preconceived idea that water was always used in too much quantity and started in to inveigh against this excessive use. The efforts of such men are worse than useless if they are directed against a farmer who is facing a difficult financial problem and who, while he may be sadly in need of information and advice, listens impatiently, if at all, to a man who tells him that he is using too much water, when he knows that his crop is burning for lack of water. There is, of course, a natural tendency to use too much water when it is available and this should be combatted by intelligent educational methods.

"The most efficient use of water today, and it will probably always be, is by practical, intelligent men, amply supplied with capital and skilled in the preparation of the land, the use of water and the growing and marketing of crops, and such men are the best judges we have of the uses of water and its duty. It would seem to me that any legislation defining or governing the duty or use of water, if any legislation be desirable, would have to be very broad, merely, as indicated above, fixing outside limits by statute, limiting the use of water broadly to a reasonably efficient use and providing for the administration of the law by practical, broad-minded men of the type described above. As time goes on, as conditions become more nearly fixed, as education and information spread, and as economic pressure forces economy, the stringency of the statutes may be increased to bring up the laggards in the efficiency of water."

GROUND WATER.

A Subject of Profound Interest and One Demanding Increasing Attention.

As the scarcity becomes more apparent, the connection between surface waters and the waters under the ground becomes more important and in need of closer attention. Such a subject has been presented to the commission just recently in the case of the Spring Valley Water Company of San Francisco and the Alameda County Water District of Alameda County, where the commission has been asked by both sides to a controversy involving subterranean waters in the Niles Cone to act as referee for the arbitration of the matter. This promises to become a famous case, in view of the comparatively meager amount of detailed investigations, so far, along these lines. Mr. Chas. H. Lee, hydraulic engineer, in a paper prepared for the Water Problems Conference, goes into the matter of ground water in an interesting and instructive manner, excerpts from which follow:

''The use of ground water sources for irrigation and domestic water supply is rapidly becoming an important element in the life and industry of California. Statistics presented in the United States irrigation census of 1910 show that the area irrigated by pumping from wells in 1909 was 277,000 acres, and the number of pumped wells was 9,297, with a combined capacity of nearly 1,000 cubic feet per second. Since 1910 there has been a very rapid increase in irrigation pumping. From data published by the Irrigation Investigations Office of Experiment Stations, United States Department of Agriculture (Bulletin 1, Progress Report of Cooperative Irrigation Investigations in California, 1912–1914, State of California Department of Engineering), the number of pumping plants in 1914 was 24,589, or more than two and one-half times the number in 1909. Assuming that the area under irrigation from pumping plants has increased in the same proportion, the acreage in 1914 would be approximately 700,000, and increasingly more since then. Most of the supply for this area has been developed since 1900. The area irrigated from ground water sources has increased from a small percentage of the total irrigated in 1900 to approximately 22 per cent in 1914. Although accurate data is not at hand, it is yet undoubtedly true that a far greater percentage of ground water is used for domestic, manufacturing and general municipal purposes than for irrigation.

''This extensive development of a natural resource of which little was previously known has brought new problems before the people of the state which touch the very life of many communities. These problems are being met with, in one phase or another, wherever the development of ground water is being undertaken, and involve not only the interests of the southern part of the state, but also of central and northern California. Fortunately the California courts have established principles regarding the percolating of underground waters which, when applied, will conserve such waters and allow their widest possible use. There is, as yet, however, no administrative body with authority to apply these rules wherever occasion demands, and the only present means by which they can be put into effect is through expensive litigation between the parties themselves. * * *''

UNDERGROUND RESERVOIRS.

''The important ground water supplies of California are derived from porous and usually unconsolidated accumulations of gravel, sand and clay. These deposits overlie the impervious rock formation of the earth's crust and are found in most of our valleys and canyon bottoms, and along the shores of bays and the Pacific Ocean, where they form the coastal plains. The material composing these deposits had its origin in the adjacent hills and mountains, where the process of weathering breaks up the solid rock formations. The streams, flowing out on to the lowlands, transport this rock debris and deposit it in the depressions or basins of the earth's surface. In this manner the valleys have been filled and the coastal plains built up. This work has been going on for centuries and under favorable conditions immense quantities of material have accumulated.

''The extent and depth of these deposits vary, depending on the area and depth of the depression or basin which they occupy, the amount of available material, and the activity of the streams which are engaged in the work of transportation. In the case of the Sacramento and San Joaquin valleys, the area of transported material covers several thousand square miles. The important coast and southern California valleys are much smaller, few of them exceeding 100 square miles, and this is also true of the coastal plain areas. The less important valleys and canyon bottoms have a still smaller area, the latter often covering but a few acres.

''In many of the underground reservoirs of southern California more than 75 per cent of the unused supply is lost by evaporation from soil and plant surfaces; and even in central California the loss is seldom less than 50 per cent.

''For any reservoir, whether surface or subterranean, the relation of inflow to outflow is registered by the vertical movement of the water surface. Rising water-level indicates an excess in rate of supply and falling level a rate of outflow greater than inflow. Under natural conditions, the adjustment of outflow to inflow for ground reservoirs is accomplished by the increase or shrinkage of the evaporating area and overflow into natural channels. Thus in the San Bernardino Valley, following a series of wet winters, there is always observed an expansion of the artesian area with its accompanying swampy condition and increased flow in Warm Creek and Santa Ana River, while the reverse is true after dry winters. Considering averages, however, inflow must equal outflow or there will be a persistent lowering of the ground water levels, shrinkage of evaporating area, reduction of artesian pressure and the drying up of springs and cienagas. Such a condition existed in southern California during the ten years dry period ending in 1904; and such a condition still continues in certain southern California basins where the combined natural and artificial outflow exceeds the rate of inflow.

"It is thus seen that the problem of determining the limit of the ground water supply is not one alone of observing fluctuating ground water levels, but must also be considered from the broader aspect of the relation of supply to demand. Recent progress in ground water investigations has shown that it is possible to determine with a certain degree of accuracy the actual quantity of inflow and outflow from underground reservoirs. The Los Angeles aqueduct has recently completed a series of measurements covering a period of three years during which the inflow and outflow were measured, the two quantities agreeing to within 10 per cent. Although conditions are not always as ideal as in the Owens Valley, yet results can be obtained in most cases which would make intelligent regulation of ground water reservoirs as possible and practical as for surface reservoirs.

"In conclusion: There are two important features of ground water supplies which should be kept in mind. First, that the ground water supply is the common source from which all users of water within a definite area are drawing, and that the effect of withdrawal from each well or group of wells is felt to a greater or less degree in every other well within the area. Second, that the ground water supply is composed of an underground reservoir of definite extent, fed by percolation from definite bodies of surface water and finding its outlet by percolation or spring flow into surface stream channels, by evaporation from moist soil and vegetation near the ground water outlet, and to a very limited extent by underflow. Thus every user of subterranean water is vitally interested in all other developments of ground water and also in the run-off from local rainfall, stream flow and the use of water for irrigation within an area covered by or tributary to the underground reservoir from which he draws."

CALIFORNIA COURT DECISIONS RELATIVE TO GROUND WATER.

"The broad physical features of ground water supplies as they have thus been outlined have been, to a large extent, recognized by the California courts in a series of well-known cases, commencing with *Katz* vs. *Walkinshaw,* decided in the year 1903. Prior to this case the courts had generally accepted the common law rule of diffused percolating waters in dealing with ground water questions, unless it could be proven conclusively that there was a movement in a well-defined subterranean channel. Under the common law or English rule ground water is recognized as a part of the soil just as the minerals or rock found there. The exception included definitely known underground streams, the subflow of surface streams, percolations tributary to surface streams and subterranean lakes or artesian basins. The scientific study of ground water data, largely made possible by the extensive development of and use of ground water in southern California, has been brought to the attention of the courts in *Katz* vs. *Walkinshaw* and succeeding cases. The trend and import of these decisions has been to broaden the exceptions of the common law to percolating waters and for all practical purposes, to do away with the previous legal classifications of ground waters, namely, percolating waters and those that flow in a defined subterranean channel.

"Mr. Samuel C. Wiel (California Law Review, November, 1913, page 26) in a suggested codification of the decisions on this subject, has recently termed an underground reservoir with its source of supply and outlets 'consolidated underground and surface water supply.' He defines it as a 'definite body of water upon the surface, and the underground water proximately connected with same in natural occurrence.' He then lists the following instances of consolidated underground and surface water supplies: First, a surface watercourse with the underground water tributary thereto; second, a surface watercourse with the subflow of underground water immediately surrounding and beneath it and moving with it in the space reasonably well defined; third, a definite basin of underground water in a stream entering and depositing water into the basin by seepage from the stream, or with the stream leaving the basin and receiving water from seepage from the basin. The first and second cases are special instances of the third, except where the surface watercourse is in a canyon bottom or other restricted body of porous material. Such a body of material with its advancing ground water is obviously an 'underground stream' instead of an underground reservoir. A consideration of sources of ground water supply in practical use in this state, however, shows the so-called 'underground streams' to be of minor importance and in many instances to be underground reservoirs on a very small scale. Hence, for all practical purposes, Mr. Wiel's 'consolidated underground and surface water supply' is the 'underground reservoir.' "

"The new rule governing the use of percolating waters occurring in underground reservoirs is now established firmly in California. This rule affirms that a natural ground water supply is a common benefit for the use of all lands having access to it and that each landowner is entitled to a reasonable use from the common supply upon his own land in conjunction with similar equal use by all other landowners. It furthermore allows use of the ground water supply on distant lands, in cases where there is a surplus over and above the present reasonable use by the overlying landowners. Thus, the new rule of percolating waters allows the widest possible use of the ground water supplies and has set a precedent which it is hoped will soon be universally applied to surface waters."

THE NEED OF GROUND WATER LEGISLATION.

"Generally speaking, the need of legislation relative to ground water sources is to provide administrative machinery to put into practical effect the rules already laid down by the courts. This and other reasons will be stated and discussed in detail as follows:

"First. The surface and ground water supplies are so intimately related physically that one can not be completely regulated and administered without similar control of the other. The physical situation has been set forth in detail in this paper, and no further comment is here necessary. It is evident that the diversion of surface water from one district to another by the storage of flood waters may under certain conditions seriously affect the ground water supply in the district. Similarly, the extensive development of the ground water supply may, and often does, materially decrease the flow in streams depending upon percolating waters. The extension or shrinkage of irrigated areas or change in the use of surface water in irrigation may also materially affect the ground water supply and indirectly the stream flow. It is the water that is being dealt with, not the surface channel, and the fact that the water passes beneath the surface and is for a time hidden from view to again reappear farther down the stream, does not offer a logical reason for its exemption from control and regulation.

"Second. The use of ground water sources is in the development stage and rapidly increasing. In many districts the subterranean supplies are the only remaining supplies or sources of undeveloped water. Hence, if regulation of ground water sources is to be undertaken at all, the logical time to do so is *now,* while the situation is in a formative period. With the growth of communities, and the increased demand for ground water, the problems of just distribution of supply will multiply rapidly. If the users of water are already accustomed to state control, the difficulties of solving these problems will be greatly simplified. Without state control, endless litigation would result with its enormous expense and accompaniment of hatred and suspicion often embracing whole communities. The only possible result of such a condition is insecurity for investment and retarded growth of whole districts.

"Third. There are a number of important ground reservoirs in the state where the development of ground water has reached and exceeded the safe yield. Water levels are persistently falling from year to year, regardless of climatic conditions, and the water extracted from them is at the expense of the storage reservoir which should be maintained for the inevitable series of dry years. There is no method or local means to oppose such an overdraft except by appeal to the courts. In many instances this is beyond the means of individual landowners and cooperative action is hard to obtain. The interests affected are thus without practical means of meeting the situation. In other instances extensive lawsuits have engendered hard feeling and suspicion and at best solving the matter only as between the litigants involved.

"Fourth. In other ground water reservoirs there is a surplus supply which in many instances is being dissipated by evaporation and is a dead loss to the community. The development of such water for beneficial use would not only eliminate the economic waste, but would in some instances, also drain and make fit for cultivation areas of land which are at present water-logged or so heavily charged with alkali that productive crops will not grow. Contemplated development of such water is often opposed by existing interests and there is no financially practical way by which protection can be obtained against litigation. In some cases local interests would not suffer injury at all. In other cases there might result a minor lowering of the water in wells which, if not offset by benefits resulting from land drainage, could easily be compensated by payment of reasonable damages by the new interests.

"Fifth. In many of the desert valleys of southeastern California, settlers, in entire ignorance of the physical situation, are investing money in wells and otherwise preparing to develop ground water supplies far in excess of the available yield. This development means economic loss to the individual and the state. In one instance with which the writer is familiar, out of 90,000 acres of agricultural land filed on in good faith under the provisions of the Desert Land and Homestead acts, it can be said with reasonable certainty that not more than 2 per cent can ever be put under cultivation. In this valley there has been spent possibly $300,000 in drilling wells, clearing land and fencing which will largely be a dead loss.

"Sixth. Water levels are being drawn down and water unnecessarily wasted from many underground reservoirs in which artesian water exists. The effect of this is similar to having the outlet of the reservoir open the year round, whether the water is being used or not. The keeping of artesian wells capped when the water is not in use, is simply and inexpensively accomplished and will result not only in the eliminating of waste of a valuable resource, but also in decreased expense for pumping. A law was passed by the California state legislature in 1907 and amended in 1909 declaring artesian wells a public nuisance when not equipped with proper mechanical devices with which to arrest their flow, and the waste of artesian water was declared a misdemeanor. The responsibility for enforcing this law lies with the county officers, who are influenced more or less by local public opinion and strong private interests. As a result, the law has not been generally enforced. Impartial state legislation such as that carried out by the State Railroad Commission would undoubtedly prove more efficient.

''Seventh. There is a great need for a systematic collection of and scientific study of data relative to ground water resources, both for the purpose of obtaining information of local conditions and for the ascertainment of broad principles. Such information and study are needed even to a greater extent than in the case of surface water supply, for the reason that the ground waters are hidden from view and not to such a great extent a matter of common observation and knowledge. The gathering of such information requires knowledge of conditions over large areas and over extended periods of time, and it furthermore requires cooperation on the part of the local people, such as drillers of wells, water companies, etc. Such conditions can only be secured through a technical organization maintained by a disinterested party such as a state or federal government. The United States Geological Survey has done much toward establishing the general principles relating to origin and movement of ground water and is beginning to develop the possibilities of quantitative study. The funds available for such work, however, are pitifully small, and the investigations are scattered through a number of states so that work in California is more or less intermittent and confined to small areas. There is, therefore, much work to be done by the state along this line.''

SUGGESTED LEGISLATION.

''The legislation which the writer believes will meet the needs outlined above and best fit into the legislation already accomplished is as follows:

''Revise and remodel the present law creating the State Water Commission so as to remedy the evident defects and omissions, thus giving the officers of the Water Commission full opportunity to demonstrate the efficiency of such a body in dealing with surface water rights.

''Second. When this has been accomplished and the commission has proven its worth to the people of the state, extend the provisions of the law so as to include the ground waters, following the rules so clearly defined by the courts already, but corroborating them as far as possible with the administrative principles already established for surface waters.

"Third. In addition to its duties as an administrative body, the commission should be also authorized and provided with funds to maintain a permanent technical organization in charge of a competent hydraulic engineer whose duties should include that of carrying on scientific investigations and studies of ground water supplies and their relations to surface waters, either independently or in cooperation with the United States Geological Survey. The commission would thus have at its command the machinery necessary for investigation of the difficult, scientific and technical questions which arise in the determination of the source and amount of percolating ground waters. A further field for usefulness for such an engineering corps would be the issuing of public reports for the information of the people interested in the development of ground water resources.

"The writer has merely attempted to present in a preliminary manner his general ideas on the subject of ground water. He earnestly hopes that the needed improvements in the present Water Commission law can be accomplished at an early date, thus paving the way for the needed ground water legislation."

"SPREADING" OF WATERS.

A Comparatively New Method of Saving Waters That Would Otherwise Run to the Sea.

The ''spreading'' of waters from streams during their flood stages over tributary areas of land for the purpose of storing those waters in the soil is a conservation idea comparatively in its infancy but which is being worked out by the Water Conservation Association in southern California.

Mr. Francis Cuttle, president of the association, has furnished a brief article on the subject. In a letter accompanying the article Mr. Cuttle says:

''The only suggestion I have is that the law should be amended so as to give the State Water Commission jurisdiction over underground waters. I have in mind the tremendous expense and long drawn out litigation that has been gone through between the city of San Bernardino, the city of Riverside and the Riverside Water Company, covering nearly a year of actual trial at court, involving the expenditure of over $100,000 to the parties to this litigation, and it is not likely that much will be accomplished when all of this expense and trouble has been incurred.''

Conservation of Storm Water by Spreading on Debris Cone.

(By Francis Cuttle.)

This article refers particularly to the work being done by the Water Conservation Association, a corporation incorporated in the year 1907, its purpose being ''To conserve the surface and subsurface waters of the Santa Ana River and its tributaries situated in the counties of San Bernardino, Riverside and Orange, in the state of California, by spreading the winter flood water of said river and its tributaries in the San Bernardino Basin and elsewhere over such lands adjacent to the channel thereof as may be available for that purpose; by securing control of such lands as may be necessary or desirable for such spreading; by purchase, lease, gift, donation, license or other methods as may be found most desirable; by the construction, maintenance and operation thereon of such works as may be found most advantageous and desirable for the purpose.''

After the organization of this association it secured by purchase and lease about 1,100 acres of land. The association also secured an act of congress setting aside certain other lands to be used solely for the purpose of spreading and conserving storm water. These lands were valueless for any other purpose, but very valuable for the conservation of storm water. In all the association controls at this time about 2,800 acres of land.

It has built diverting works consisting of three intakes from the Santa Ana River and from these intakes has built contour ditches across the debris cone and from these ditches are many outlets from which the water is turned onto the sand and gravel, where it sinks to come out at lower levels and thereby replenish the artesian wells, streams and springs during the long dry summers which are characteristic of the climate of southern California, and during which water is so valuable and necessary for domestic and irrigation purposes.

The method of diversion from the river is a simple one, loose boulder dams being constructed to divert the water from the river through the headgates and into the contour ditches. In one instance a type of dam known as the Pedley dam (a patented design) was constructed. This dam consisted of a wire bag or net into which boulders were laid, the bag then being brought up on both sides of the dam of boulders and fastened securely. The first one of these dams washed away. A more substantial one was built with heavier wire and below it was built an apron of boulders fastened together by drilling into the boulders and then inserting galvanized wire cable into these holes and then pouring hot lead into the holes, so that the whole apron below the dam was tied together securely by these wire cables. During the heavy floods of 1916 this dam stood, but the river washed around the ends of it and cut away the loose boulders and gravel to such an extent as to make it necessary to rebuild again after the storm water had subsided.

An accurate record has been kept of the amount of water spread only since 1912. It is as follows:

1912	293,238.77	day miner's inches	or	11,729.55	acre feet
1913	82,971.30	day miner's inches	or	3,318.85	acre feet
1914	891,893.32	day miner's inches	or	35,675.73	acre feet
1915	717,634.49	day miner's inches	or	28,705.38	acre feet
1916	274,555.93	day miner's inches	or	10,982.23	acre feet

The question of whether or not the spreading of storm water on this debris cone has replenished the artesian supply of the San Bernardino artesian basin, about five miles distant and approximately 500 feet lower in elevation, has been a question bitterly disputed in the litigation which has recently taken place between the city of San Bernardino, city of Riverside and Riverside Water Company, and without going into the merits of this case it may be sufficient to say that the judge in an oral decision on the facts in the case said:

> "I do not believe that we can account for the great volume of water in that region of the artesian basin save upon the hypothesis

> that it came down the Santa Ana River, flowed and flowed for a long time in a channel which penetrated the Antil region (the most prolific part of the San Bernardino artesian basin), thus creating away down deep under the ground an ancient river channel through which waters from the head of the cone of the Santa Ana River may percolate downward into the Antil region. I don't believe we can account for the vast amount of water found in the Antil region save upon some such hypothesis as that. * * * I think, therefore, the Meacham well shows that there is not enough water coming down from the northern cone to account for the vast productivity of the Antil wells, and that that productivity can only be accounted for by assuming that the Santa Ana River at one time formed a channel which is now many, many, perhaps hundreds of feet under the surface of the ground, and I shall so find."

While there is a difference of opinion between the experts employed in this notable case, as to whether or not the spreading of this storm water really would replenish artesian wells five miles distant, the court being the umpire and having the last word, has stated that in his opinion the spreading of such storm water did replenish these wells.

The cost of the spreading of this storm water has been ascertained to be about 15 cents per acre-foot. Of course, not all of the water sunk on the debris cone is again available for beneficial purposes, but the best engineering advice on the subject claims that about 25 per cent of the water sunk is again available for beneficial purposes. That being the case, the cost of water available for beneficial purposes would be about 60 cents per acre-foot, which of course would be a very low cost for a water supply in most regions in California.

A practical test was made of the spreading of this storm water to ascertain the amount of water absorbed by spreading on the surface. As nearly as it can be estimated, about 160 inches of water was sunk continuously to the acre. Nine reservoirs, having an average depth of not over three feet and an average area of about two acres, absorbed continuously about 1,000 inches of water.

ARTICLES OF INCORPORATION.

The Water Conservation Association is an incorporated body and the purposes for which it is formed are set forth in the articles of incorporation as follows:

"To conserve the surface and subsurface waters of the Santa Ana River and its tributaries situated in the counties of San Bernardino, Riverside and Orange, in the state of California:

"(*a*) By spreading the winter flood waters of said river and its tributaries, in the San Bernardino basin and elsewhere, over such lands adjacent to the channel thereof as may be available for that purpose;

"(*b*) By securing control of such lands as may be necessary or desirable for such spreading, by purchase, lease, gift, donation, license or other methods as may be found most desirable;

"(*c*) By the construction, maintenance and operation thereon of such works as may be found most advantageous and desirable for the purpose;

"(*d*) By prevention of waste of artesian and subsurface waters of said stream and the tributaries and sources of supply thereof, by the enforcement of the law of this state prohibiting waste of such water, and by securing evidence of such violation, and by the prosecution of the violators of said law;

"(*e*) By such other methods of conserving the waters of said stream and its tributaries as the board of directors of the association shall determine."

Each member pays a membership fee of $5.00 and the interest and right of each member is equal.

CHECK DAMS

A European Method Which Is Being Used to Conserve Flood Waters.

Due to the necessity of flood control and of more water for irrigation, southern California is developing a comparatively new method of conserving waters in this country, although Switzerland and Austria and Japan, notably, have successfully demonstrated its efficiency. The use of retarding or check dams is the method referred to. The check dam, like the spreading of water, is only one phase of the work in the south, and both are spoken of herein on account of being comparatively later developments in the field of water problems and likewise conservation measures. The spreading of flood flows on the gravel cones below the mouths of canyons does not promise enough relief in itself from maximum flood flows on account of the limits of application. The check dam theory is to attack the floods while they are divided in the various small canyons and the headwaters of the streams before these waters become united and irresistible in the main streams below and also to increase underground storage.

Mr. Frank H. Olmsted, an authority on check dams, says in his reports that if the flood water can be held back by small dams in the canyons, it will never get into the big canyons as a flood. He speaks of experiments made in one small canyon in Los Angeles County, which is 1,000 feet long and drains twenty-two acres, where six log and stone dams, costing but $200 combined, were constructed. It rained considerably during the first half of January of 1916, and the ground was pretty well soaked in this area, as well as elsewhere in southern California. The test came when the big storm of January 16 and 17 broke, yet, despite the downpour, Mr. Olmsted states that there was no suggestion of a stream emerging from the mouth of this canyon. If every canyon had been likewise treated, he believes there would have been no great floods at that time. Similar work has been done in other canyons, with like results. The check dams are not only useful in the prevention of destructive floods but also for increasing the subterranean water supply by reason of the water soaking into the hillsides and finding its way into the underground areas below for use later in the season when required for irrigation. There are several different varieties of these retarding devices.

Major A. A. Fries, United States Government engineer, made an inspection of these check dams after the disastrous floods of January, 1916, and is quoted as saying: "While the principle is not new, I have never seen it so well applied. The work is worthy of careful study. You have yet to demonstrate how successfully the principle can be applied in the torrent beds across the valleys, but as to the mountain difficulties, it is clear that you are solving the problem.''

In Haines Canyon, in Los Angeles County, 384 small checks for retarding velocities were built. The most expensive dam cost $500, the least expensive $5.00, and the average cost of all was $15.62 per dam. The complete control plan of the southern counties includes afforestation, reforestation, impeding and impounding reservoirs, spreading of waters over percolating areas, rechanneling of streams, conduits for conveyance of flood waters from one section to another, riprapping of banks, reinforcement of channels, deepening and widening of channels on the detrital cones at the canyon mouths and on the coastal plains between the sea and the mountains.

INTERSTATE WATER RIGHTS.

The Use of Water From One State to Another Is a Coming Policy.

The Water Commission takes the stand that the imaginary boundary lines between states should not interfere with the free use of water from one state to another. It holds that these rights should be reciprocal and that each state will benefit mutually in the exchange. Heretofore, the sentiment and the statutes have been against this broader view, with the result of a great deal of loss to individuals and the states alike. So far as California is concerned, the history of the state shows that much of its growth and prosperity has been due to developments in the bordering states of Nevada and Arizona, particularly in regard to those things requiring the use of water. Since the first discovery of gold in Nevada, and notably since the operation of the claims on the Comstock Lode at Virginia City, the principal beneficiaries of such development, so far as cities are concerned, were the large cities of California, San Francisco during the earlier period, and Los Angeles during the later period, during which time railroads were constructed from the latter city to the mines in the Goldfield region. Today Los Angeles derives a great deal of its business from the neighboring state of Arizona.

Any factor which contributes to the development of the mineral or other resources of either of these border states has a direct and important bearing upon the prosperity of California, and that, in turn, upon the other states at interest. Much of the gold mined in Nevada is invested in California. Activity in mining there has meant, and still means, increased markets for the products of the farms and factories of this state and a greater business for its merchants. As the acquisition of cheap power may be the deciding factor as to whether a mine shall be operated or not operated, a transmission of electric power from California to Nevada will assist in the development of the latter state and, through increased trade, materially aid in the growth of this state, and enhance mutual interests already long established. The same argument is true in the matter of water for agricultural purposes. The commission's idea is, that so far as the public is concerned, the individuals of adjoining states are neighbors, and that the development of the border lands between the two is of equal value to both.

Instances in which interstate rights are involved are:

1. On a boundary stream, such as the Colorado River.
2. Where a stream runs from one state to another, such as the Truckee River.

3. On interstate lakes, such as Lake Tahoe.
4. By canals or ditches running from one state to another.

Some time ago the commission wrote to Mr. John H. Lewis, state engineer of Oregon, asking for his views on the subject, Oregon having taken up the regulation of waters several years prior to this state. The following throws a valuable light on this important question:

MR. W. A. JOHNSTONE,
President California State Water Commission,
San Francisco, California.

MY DEAR MR. JOHNSTONE:

I am in receipt of your letter with reference to interstate water rights and in reply I am enclosing herewith extracts from the Third Biennial Report of this office, which may be of some interest to you. I am also enclosing copy of Chapter 224, Laws of Oregon for 1911, dealing with the situation in Oregon.

As you probably know, it is my belief that the interstate question will never be settled until we have some federal law governing the distribution of water between the states on interstate streams. We have upper appropriators and lower appropriators on long interstate streams, just as we have upper and lower appropriators in different counties within the state. The upper state, of course, needs no legislation for its protection, but the lower state does.

The Supreme Court of the United States in the case of *Kansas* vs. *Colorado,* held that there must be an ''equitable apportionment of benefits'' of interstate water as between states. Congress alone can define what this is and provide the necessary machinery to enforce such distribution. However, it will be years before such legislation is provided. In the meantime, some form of reciprocity between states may tend to promote development in the border counties. I therefore recommend the enactment of the law somewhat similar to the Oregon law as enclosed herewith.

I trust that this brief statement may be of some value in connection with your deliberations on this very important subject.

Respectfully yours.

JOHN H. LEWIS,
State Engineer.

DIVERSION OR USE OF WATER MAY BE IN ANOTHER STATE.

(Chap. 224, Laws 1911, Oregon.)

"That no permit for the appropriation of water shall be denied because of the fact that the point of diversion described in the application for such permit, or any portion of the works in such application described and to be constructed for the purpose of storing, conserving, diverting, or distributing such water, or because the place of intended use or the lands to be irrigated by means of such water, or any part thereof, may be situated in some other state, but in all such cases where either point of diversion or any of such works or the place of intended use, or the land, or part of the lands, to be irrigated by means of such water, are situated within the state of Oregon, the permit shall issue as in other cases; *provided, however,* that the state engineer, may in his discretion, decline to issue a permit where the point of diversion described in the application is within the state of Oregon, but the place of beneficial use in some other state, unless, under the laws of such state, water may be lawfully diverted within such state for the beneficial use in the state of Oregon."

EXTRACT FROM THIRD BIENNIAL REPORT OF STATE ENGINEER OF OREGON.

Interstate Rights.

The states of Kansas and Colorado have expended eight years' time and over $200,000 in litigation over interstate rights to waters of the Arkansas River which rises in Colorado and flows through Kansas. Property rights in the latter state, it is claimed, have been greatly injured through subsequent diversions in the upper state. The supreme court held in part that the common law doctrine of riparian rights did not apply as between states, and as to the interstate streams, there must be an equitable division of waters. The decision was in many respects disappointing. No practical results were the outcome of this vast expenditure of time and money, and interstate water law is advanced but little.

Oregon will soon be confronted with interstate questions of great magnitude. Already the threatened diversion of Clear Lake in California, which now flows through Langels Valley in Oregon, terminating in Tule Lake in California, is agitating this community, threatening the future possibilities of this beautiful valley. Farther to the east a 100,000-acre State Carey Act project will derive its main water supply by storage in Oregon from drainage area in California and Nevada. A number of smaller conflicts with Nevada are ultimately assured, as well as with California power interests, which may be damaged, perhaps, by the diversion of water for irrigation from Klamath River in Klamath County.

Uncertainties with Idaho already exist. A 60,000-acre Carey Act project in Jordan Valley will derive its water supply from storage just over the line in Idaho. A 20,000-acre irrigation district has been formed in Idaho, its water to be stored on the Owyhee River in Oregon. Another Idaho project will be dependent upon the conservation of the waters of Sucker Creek in Oregon. The Wilson ditch in Malheur County, constructed many years since, to water lands near Ontario, has been rendered almost valueless by subsequent diversions of water from Snake River in Idaho and Wyoming. Oregon has granted water power rights in Snake River at the Ox Bow and other points which at least will cause trouble for subsequent appropriations for irrigation in Idaho and Wyoming.

Irrigators in Washington have appealed to the Board of Control for the protection of their water upon a small stream on which disputes have arisen in Oregon.

We have paid dearly to learn that county control of waters was impossible. After the sacrifice of much valuable time and money, the destruction of interstate rights, the engendering of strife and bad feeling between states, and the retarding of development in the territory tributary to interstate streams, we may learn that state control of all waters within its borders is just as impossible as county control. Streams do not follow county lines any more than they follow state lines. Such a division is impossible. We should be able to store water in Wyoming for the irrigation of lands in Malheur County, using the Snake River as a canal through Idaho, just as we can store water at the head of the John Day River, in Grant County, to be conveyed under state protection through other counties, for use at the mouth of such stream in Oregon. It should be possible to store the flood waters of the Colorado River in the available basins in Colorado, where no use is possible in such state, and convey this water, under United States or interstate protection, for use in southern California. The fullest development of the western states will lag until such time as some legislation is provided affecting the determination, the granting and the protection of interstate rights. We can not expect the United States Supreme Court to work out and adopt some administrative system adequate to the needs in this respect. This is a problem for the legislative branch of the government.

State control should be adhered to as far as possible. This, supplemented by interstate control through agreement between the states, say within the Columbia River basin, may be the final solution. But this probably can never be secured without first submitting to federal control.

The National Irrigation Congress at Boise, Idaho, in 1906, appointed a commission, of which the writer was a member, to investigate this subject and report the next year at the Sacramento meeting. The views of this meeting of such commission, as herewith presented, are rapidly being accepted by a growing number of people as the only solution of this vexing problem:

"In view of existing conditions which place the burden of the administration of water rights upon the different states, your committee believes and recommends, as do a great many of those answering the interrogatories, that the different states affected by interstate streams take some steps looking to a more uniform system of laws affecting water rights, making those laws of each state agree as nearly as possible with those of sister states and that there should be a general overhauling of all of the laws of the arid states as to the matter of water rights, to the end that litigation of this character of property may be reduced to a minimum, and that the greatest good may come to the greatest number in the matter of the use of water for irrigation.

"While it is true in the administration of water rights upon interstate streams by the different states the right of appeal to the federal courts exists, that remedy is expensive, slow and unsatisfactory. A decision of a court, once rendered, remains fixed and only settles the particular questions involved in that case, while the conditions surrounding irrigation on either side of the state line, are constantly changing and the use of water for irrigation rapidly growing.

"*If there is to be any protection of priorities across state lines, it should be by a federal administrative system corresponding in character to that needed for the establishing and protection of rights within a state.*"

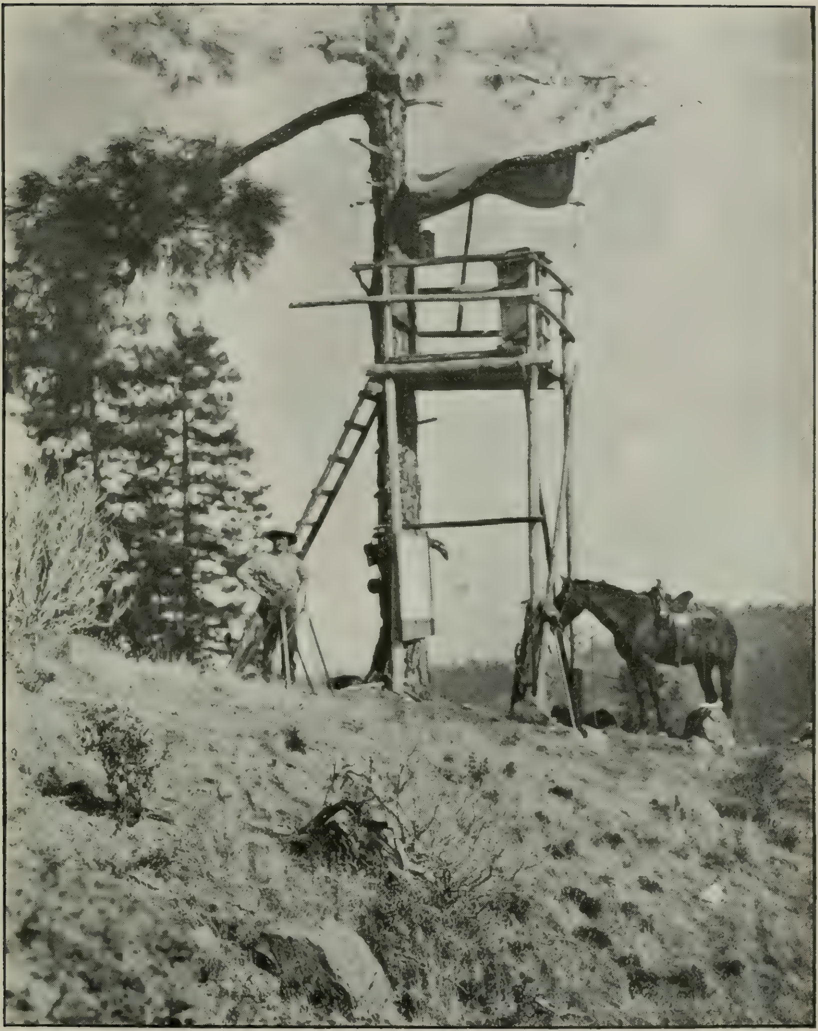
THE INFLUENCE OF SALT WATER FROM TIDES ON APPROPRIATION OF FRESH WATER.

A new phase of the subject to the general public and to the great majority of persons using water is the comparative effect that the tides have on its use for irrigation in the lower reaches of the rivers. An investigation has been initiated by preliminary tests made by the commission on Suisun Bay. Water from the upper end of this body, into which empty both the Sacramento and San Joaquin rivers, is pumped on the adjacent lands for the irrigation of the ordinary delta land crops of asparagus, celery, beans, sugar beets, etc. During the summer months after July the water becomes brackish, and as the rivers "go down" the saltiness or salinity increases and the water becomes too saline for irrigation—and this at a time when irrigation is still required. This salinity, it has been found, depends on the stages of the rivers and on the tides. The California-Hawaiian Sugar Refining Company at Crockett has determined this in obtaining its supply of fresh water for industrial purposes. This company sends a tank barge up the river and sometimes it is necessary to go as far up as Antioch in order to obtain water out of the reach of tidal influence. The captain takes tests every short distance by chemical means until he finds water fresh enough for industrial use.

The commission has made some tests by the electrolytic method—that is, the degree of salinity is determined by the resistance offered to an electric current passed through a receptacle containing the water to be tested by means of an especially designed apparatus. Although these tests have not been worked out in detail, they show a considerable fluctuation of the salinity of the water at the point taken.

Just what bearing these conditions may have on irrigation is a matter to be decided. Farther up the rivers, above the point where the salinity of the water now makes it unfit for irrigation, thousands of acres of rich land are watered from the streams. In the event of additional appropriations of water and the consequent increased lowering of the stream in the summer season, the question arises as to whether the influence of the tides will encroach farther inland and render water unfit for irrigation that can now be used. This matter serves to indicate one of the many new and important phases of the great water question as it is developing in California through the great use of that commodity and a rapidly increasing demand for more.

PLATE IV.



Co-operation with the U. S. Forest Service. Forest ranger on duty. These rangers have a wonderful knowledge of the territory which they cover.

ARM IN ARM WITH UNCLE SAM.

COOPERATIVE WORK OF THE WATER COMMISSION IN CONNECTION WITH THE UNITED STATES.

In California, as in other states, the federal government maintains organizations for the work in its different departments. Those which particularly concern the Water Commission are the Forest Service, the Geological Survey and the office of Public Roads and Engineering of the United States Department of Agriculture, which latter was popularly known prior to July 1, 1915, as Irrigation Investigations of the the office of Experiment Stations.

FOREST SERVICE COOPERATION.

The Forest Service has a strong organization in California, presided over by the district forester, under whom are the forest supervisors having immediate supervision of the various national forests in the state. These supervisors in turn exercise authority over the forest rangers who are the ''minute men'' of the service. These rangers are also the watchmen of the forests, and while there are not as many of them as the service would desire they cover much ground and may be expected to ''bob up'' anywhere.

Every application for water in which the point of diversion is located in a national forest is, under the cooperative agreement, reported on by the forest ranger to the forest supervisor and thence to the Water Commission. The ranger is the best informed man on the job for first-hand information. He knows the streams in his allotted section like a book, knows the stages of the water at different periods, knows those who are already using it and to what extent, and has much other valuable knowledge. This information is often of utmost assistance in the consideration of applications.

The district forester's office and the Water Commission cooperate in the matter of the use of water for power in the national forests. An applicant must also obtain permission from the federal government in such cases for reservoir sites, rights of way for ditches, pipe lines, etc. If these have not been secured from the national government, the granting of a permit by the Water Commission would be of no avail. Therefore, all concerned are assisted greatly by the close cooperation of these two organizations, as may readily be seen.

UNCLE SAM'S WATER GAGE.

The water resources branch of the United States Geological Survey may be rightly termed ''Uncle Sam's water gage,'' for it is through this organization that the waters of the nation, figuratively, trickle and flow on their downward career.

The connection of the Water Commission with the Geological Survey is in reference to stream measurements and stream flow. This cooperation originated in the fall of 1912 with the old State Water Commission, which furnished eight Gurley water-stage registers to be installed on streams for which river profiles were available. The general plans for the installation of recording gages provide for a well on the bank of a stream having inside dimensions of about 3 x 4 feet, extending from above flood stage to a depth sufficient to reach below any possible low water. This well is connected with the river by means of a 4-inch pipe. The gage house or shelter is built directly over the well and of such size as could permit ready access to the instrument. The size of the building in general is about 5 x 6 feet inside.

The commission cooperates with the Geological Survey to the extent of $5,000 per annum, and in the last two years this money has been expended in general on the regular maintenance work connected with the stream-flow investigations in various sections of the state. For this two-year period ending November, 1916, records were obtained at 217 points in California, distributed as follows:

	Per cent
North Pacific drainage	8
South Pacific drainage	27
Sacramento drainage	18
San Joaquin drainage	34
Great Basin drainage	13

On account of the intensive development in certain sections, there has arisen the necessity for increasing the general accuracy of the work. Marked progress has been made in this direction during the past two years by the use of improved field and office methods, as well as by the installation of more satisfactory station equipment. In all, there are about 30 water-stage recorders in use in this district, including the eight furnished by the Water Commission in 1912. It is the opinion of the district engineer that this number should be steadily increased until at least one station on each of the principal rivers of the state is equipped with one of these self-recording gages. It is by the use of such instruments only that it is practicable to secure a continuous record of stage, which is especially necessary on streams having considerable daily fluctuation. The ability of the Water Commission to call upon the Geological Survey for these stream-flow measurements is of great importance and, economically, is an arrangement of great value to the state. A number of special water resource investigations have been made for the commission, and during the past year reports have been furnished covering the following drainages: Cow Creek, Deer

Creek, sloughs of Sacramento River and diversions from upper San Joaquin River. In addition, two gaging stations have recently been installed at the request of this commission. All stream-flow records collected are published annually in the series of water supply papers by the Geological Survey.

WATER AND RICE CULTURE.

Interesting Study of the Use of Water on the Rice Fields of California and Some Figures on Same.

Another one of the cooperative agreements of the Water Commission is that with the office of Public Roads and Rural Engineering of the United States Department of Agriculture, better known as the office of Experiment Stations.

Taking cognizance of the great importance of the rice industries of the state, the Water Commission appropriated money to help defray the expenses of the study of the use of water in the culture of rice. This investigation has been conducted under the immediate supervision of Frank Adams, his office having made a like appropriation to be used along lines mutually agreed upon.

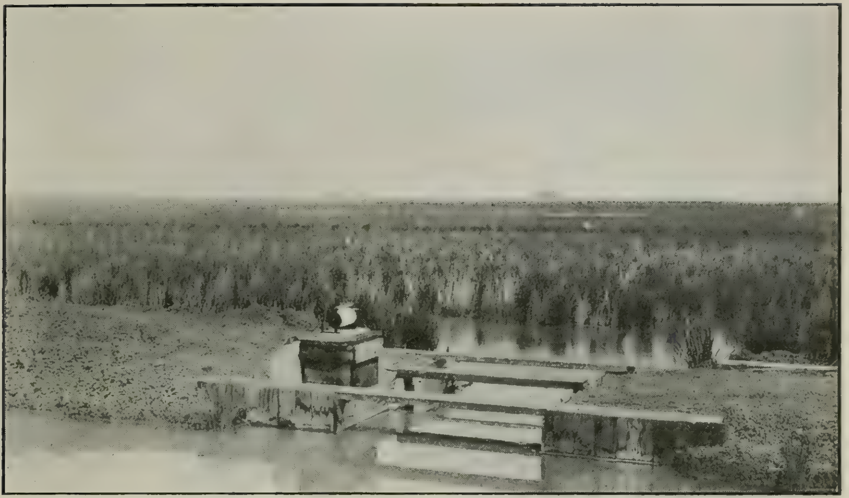
Something of the phenomenal growth of rice culture may be gleaned from the fact that variety tests were first started in the vicinity of Biggs in 1910, and the first commercial crop was grown on 1,400 acres just four years ago, while the year just past showed nearly 70,000 acres under cultivation to this cereal. The total area planted the year before was about 28,000 acres, according to the Rice Growers' Association of California. The total acreage of rice in the United States in 1916 is given as 879,366 acres, divided among the rice-producing states as follows:

Louisiana	446,571 acres
Texas	234,367 acres
Arkansas	121,828 acres
California	69,000 acres
Missouri	200 acres
North Carolina	7,400 acres
South Carolina	
Georgia	
Florida	
Alabama	
Mississippi	

The industry is of especially great value to California, as it makes possible to put to a profitable use large areas of land which of recent years were not fitted to other crops. Prospective growers have all summer been looking for suitable tracts for rice culture, and the acreage of 1917 will no doubt greatly exceed that of the present year. The figures given by the California Rice Growers' Association for the area planted this year are as follows:

Butte County	30,000 acres
Glenn County	10,000 acres
Colusa County	13,000 acres
Yolo County	10,000 acres
Sutter and Yuba counties	8,000 acres

PLATE V.



Weir and register on rice field. Co-operation with U. S. Department of Agriculture.

Typical rice field, showing levees. Co-operation with U. S. Department of Agriculture.

Rice is also being grown on scattered areas in the San Joaquin Valley—in Kern, Fresno, Tulare, Kings, Merced and Stanislaus counties, estimated to be between 10,000 and 15,000 acres.

Following is a report based on the work done under the cooperative agreement between the office of Public Roads and Rural Engineering, United States Department of Agriculture, and the State Water Commission:

REPORT OF MEASUREMENTS OF THE DUTY OF WATER FOR RICE IN SACRAMENTO VALLEY, CALIFORNIA.

By Ralph D. Robertson, Irrigation Engineer.

''Approximately 64,000 acres of rice were irrigated in Sacramento Valley in 1916. Of this area approximately 29,500 acres were irrigated from Sacramento River, approximately 24,000 acres from Feather River, approximately 8,800 acres from minor streams, and about 1,700 acres were irrigated with water pumped from wells. The first commercial crop of rice in California was grown in 1912 on 1,400 acres, and the area in rice in 1916 was over twice that planted in 1915.

''In order to ascertain the amount of water used in growing rice, eighteen representative fields were selected for the purpose of carrying on duty of water investigations. Nine of these fields were located on the west side of Sacramento Valley in the vicinity of Willows, Maxwell and Princeton, and nine on the east side in the vicinity of Biggs, Richvale, Nelson and Marysville.

''The area of the fields studied ranged from 13.95 acres to 1,106 acres and the total area covered in the investigation was 3,305 acres. Ten different soil types were represented. Four fields received water from Sutter-Butte Canal, four from the Hallwood irrigation system, one from Western Canal, seven from Sacramento Valley West Side Canal, one by pumping from Sacramento River, and one by pumping from wells.

''With the exception of two fields where current meter measurements were necessary, and of one field where a submerged orifice was used, all measurements of the water applied were made with weirs and automatic water registers installed at the direct entrance to the fields. Messrs. Hugh S. Patton and Charles L. Kaupke were employed as hydrographers throughout the irrigation season in connection with the investigation, with additional help during part of the season.

''Where water was wasted or drained from a field, an attempt was made to measure or estimate the quantity removed. In many cases there was considerable seepage through the outside levees into adjacent sloughs which could not be measured, and again in some instances the levees were not sufficiently high to prevent water flowing over the tops into neighboring fields or roads. Probably one-third or one-half of the water applied to some fields was lost in this manner.

"Another factor which enters into the use of water is the depth to ground water. Where the water table was about one foot below the surface, as in the case of fields near Biggs, the amount applied was much less than in fields near Willows or Marysville, where the water table was three to twelve feet below the surface.

"There is a difference of opinion among rice growers as to the best manner of irrigating rice. Some claim it is necessary to keep water moving constantly through the fields to prevent stagnation and maintain a vigorous growth of the plant, while others believe that just enough water need be applied to take care of evaporation and maintain a uniform depth over the field. This point, as well as other features of rice irrigation, is being investigated by the office of Public Roads and Rural Engineering in cooperation with the Bureau of Plant Industry.

"Aside from the proximity to sloughs, depth to water table, and manner of irrigating rice, the character of the soil and the preparation of the land play an important part in the use of water.

"The minimum amount of water used on any field was 4.27 acre feet per acre on the Adams field on Stockton clay adobe near Biggs. The maximum net amount used was 14.83 acre feet per acre on the Johnson No. 1 field on Willows loam and Willows clay adobe near Willows. The average depth applied to eighteen fields was 8.23 feet.

"None of the canal companies in Sacramento Valley, with the exception of the Yolo Water and Power Company, which charges $1.50 per acre foot for water, have as yet sold water on an acre-foot basis.

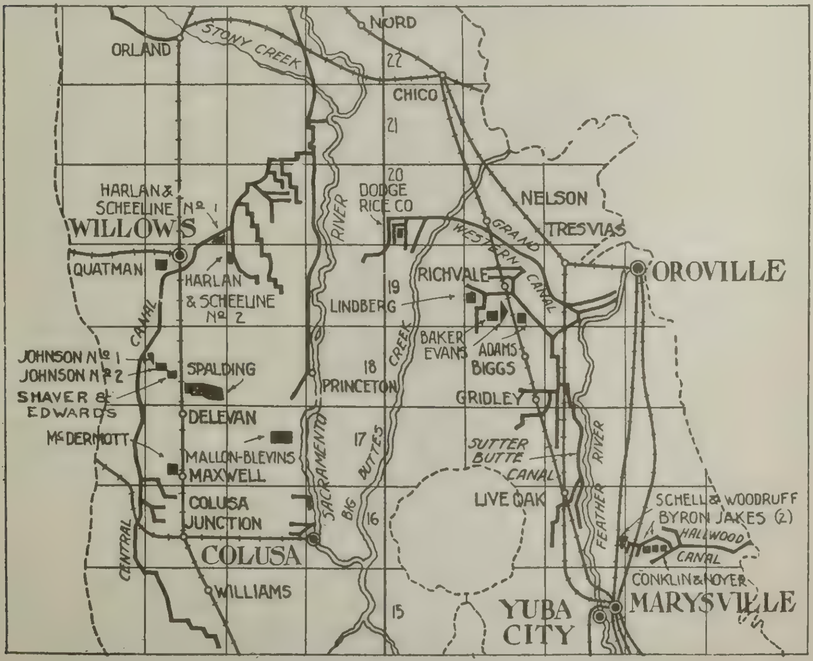
"The Sacramento Valley West Side Canal Company, by authority of the Railroad Commission, charged $7 per acre for rice. For this charge the water user was entitled to five acre feet of water per acre, and additional amounts were charged for at the rate of $1.50 per acre foot. However, no cases are known where charges were made on an acre-foot basis. The Sutter-Butte Canal Company has furnished water to lands having water rights at $5 per acre. Recent contracts made by the company are on the basis of $7 per acre with reimbursements to the water user for the construction of ditches and procuring of rights of way, providing water has been used for more than two successive years. The amount of water called for in their contracts is on the basis of one cubic foot per second for each 53⅓ acres.

"The irrigation season for rice in Sacramento Valley is divided into two periods. In the first period the rice is irrigated from four to eight times without having water stand on the field. When the rice is about six inches high, which is from about four to six weeks after planting, the fields are kept submerged about six inches deep until the rice is matured. When the heads are turned down and properly filled, the water is removed from the field to permit of harvesting. With one exception, all of the fields studied in 1916 were planted to Wataribune rice, which is the most widely planted variety in California. The total length of the irrigation season varied from 155 to 189 days. A variety of Japanese rice known locally as California Pearl on the Dodge Rice Company tract required only 147 days to mature.

"Rice fields are laid off in contour checks ranging from two to five or more acres in extent. A few years ago the levees were made with Fresno scrapers, but the common practice now is to throw them up with a large checker or crowder drawn by a tractor.

"The Sutter-Butte Canal Company, which takes its supply from Feather River, about ten miles above Gridley, served the largest area of rice, amounting to 17,000 acres. The Western Canal Company, which heads on the Feather River shortly above the Sutter-Butte Canal, served 5,500 acres. The lands served under these two systems are classified by the Bureau of Soils as Stockton clay adobe. The Sacramento Valley West Side Canal supplied water to 8,500 acres in Glenn and Colusa counties. A striking feature here was that considerable land locally known as "goose land," and which had heretofore been unutilized except for scanty pasture, was planted to rice. Other large enterprises which obtained water by pumping from the Sacramento River were the Moulton Irrigated Land Company, California Land and Rice Products Company, Cheney Slough Irrigation Company, Mallon-Blevin Company, and River Gardens Farms Company."

A summary of the measurements is presented herewith:



SUMMARY OF MEASUREMENTS OF DUTY OF WATER FOR RICE ON EIGHTEEN FIELDS IN SACRAMENTO VALLEY, CALIFORNIA, 1916.

Cooperation Office of Public Roads and Rural Engineering, United States Department of Agriculture, and California State Water Commission.

West Side.

Name and location	Area, acres	Soil type	Source of water supply	Date of first irrigation	Date of beginning submergence	Date water turned off	Length of irrigation season, days			Number of irrigations prior to submergence	Depth of water used prior to submergence, feet	Depth of water used during submergence, feet	Total depth applied, feet	Estimated or measured surface waste, acre feet per acre	Net depth applied, feet	Average area served per cu. ft. per second, acres		Approximate depth to ground water, feet	
							Prior to submergence	Period of submergence	Total							Period of submergence	Whole season	Beginning of season	End of season
Harlan & Scheeline, No. 1: NE. ¼ Sec. 36, T. 20 N., R. 3 W.	135.60	Tehama clay loams and clay.	Sacramento Valley West Side Canal.	April 26	June 21	Oct. 12	56	114	170	9	1.95	5.85	7.80	0.00	7.80	39	44	6.0	4.0
Harlan & Scheeline, No. 2: SW. ¼ Sec. 6, T. 19 N., R. 2 W.	132.53	Tehama clay loams and clay.	Sacramento Valley West Side Canal.	May 3	June 24	Oct. 22	52	121	173	7	2.23	6.22	8.45	[1]	8.45	38	41	6.0	4.5
Ole Johnson, No. 1: NW. ¼ Sec. 18, T. 18 N., R. 3 W.	26.26	Willows loams, Willows clay adobe.	Sacramento Valley West Side Canal.	May 8	June 14	Oct. 30	37	139	176	4	2.69	12.14	14.83	[2]	14.83	23	24	5.5	0.5
Ole Johnson, No. 2: SE. ¼ Sec. 18, T. 18 N., R. 3 W.	75.50	Willows clay adobe	Sacramento Valley West Side Canal.	May 17	July 1	Oct. 29	45	121	166	4	1.42	5.76	7.18	0.72	6.46	49	52	5.5	1.5
M. McDermott: NE. ¼ Sec. 33, T. 17 N., R. 3 W.	61.00	Willows loam	Sacramento Valley West Side Canal.	April 19	May 19	Oct. 24	30	159	189	5	1.45	10.72	12.17	3.10	9.07	42	42	6.5	4.0
Shaver & Edwards: NE. ¼ Sec. 20, T. 18 N., R. 3 W.	44.85	Willows loam, Willows clay.	Sacramento Valley West Side Canal.	May 22	July 6	Oct. 23	45	110	155	5	1.00	6.58	7.58	0.90	6.68	39	46	6.8	3.6
Spalding Company: Secs. 22, 23, 26 and 27, T. 18 N., R. 3 W.	866.00	Willows clay	Sacramento Valley West Side Canal.	April 23	*	Oct. 25	*	*	186	*	*	*	7.39	1.00	6.39	*	57	6.0	5.5
A. Quatman: SW. ¼ Sec. 6, T. 19 N., R. 3 W.	70.15	Willows clay	Pumping from wells	April 26	*	Oct. 21	*	*	179	*	*	*	6.49	0.00	6.49	*	55	12.0	12.0
Mallon Blevins: Secs. 14 and 15, T. 17 N., R. 2 W.	1,106.00	Sacramento clay	Pumping from Sacramento River.	April 17	*	Sept. 27	*	*	164	*	*	*	6.71	1.30	5.41	*	61	4.0	5.0

East Side.

E. L. Adams: NE. ¼ Sec. 34, T. 19 N., R. 2 E.	39.50	Stockton clay adobe	Sutter-Butte Canal	April 13	June 9	Sept. 30	57	114	171	6	1.01	3.26	4.27	0.00	4.27	70	80	1.5	1.0
Baker Bros.: S. ½ Sec. 28, T. 19 N., R. 2 E.	229.50	Stockton clay adobe	Sutter-Butte Canal	April 21	June 14	Oct. 9	54	118	172	6	0.82	3.84	4.66	0.00	4.66	61	73	1.5	1.0
Evans Bros.: SW. ¼ Sec. 22, NW. ¼ Sec. 27, T. 19 N., R. 2 E.	187.23	Stockton clay adobe	Sutter-Butte Canal	April 28	June 17	Oct. 4	50	110	160	7	1.14	3.66	4.80	0.00	4.80	60	67	1.5	1.0
Carl Lindberg: W. ½ Sec. 18, T. 19 N., R. 2 E.	38.80	Stockton clay adobe	Sutter-Butte Canal	April 28	June 13	Oct. 14	46	124	170	6	1.91	7.44	9.35	[2]	9.35	33	36	1.5	1.0
Dodge Rice Company: N. ½ Sec. 29, T. 20 N., R. 1 E.	41.00	Stockton clay adobe	Western Canal	May 3	July 12	Sept. 26	70	77	147	6	2.50	5.78	8.28	[3]1.02	7.26	32	35	1.5	1.0
Conklin & Noyer: SE. ¼ Sec. 27, T. 16 N., R. 4 E.	36.70	San Joaquin loam	Hallwood Canal	April 14	June 13	Sept. 29	60	109	169	5	2.33	10.08	12.41	2.41	10.00	28	34	------	3.0
Byron Jakes (east field): NW. ¼ Sec. 28, T. 16 N., R. 4 E.	13.95	San Joaquin loam	Hallwood Canal	April 18	June 23	Oct. 9	66	109	175	5	1.44	13.94	15.38	[4]1.95	13.43	18	26	------	3.0
Byron Jakes (west field): NW. ¼ Sec. 28, T. 16 N., R. 4 E.	28.00	San Joaquin loam	Hallwood Canal	April 15	June 24	Oct. 10	70	109	179	6	3.01	15.69	18.70	[2]5.88	12.82	22	28	------	3.0
Schell & Woodruff: W. ½ Sec. 30, T. 16 N., R. 4 E.	172.00	Madera clay loam, Madera and Gridley loam undifferentiated.	Hallwood Canal	April 17	June 16	Oct. 10	60	117	177	5	1.73	7.89	9.63	[5]	9.63	30	45	------	1.7

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*Indefinite.

[1] Small loss through outside levee into adjacent slough.

[2] Considerable loss through outside levee into adjacent slough.

[3] Additional loss through outside levee into adjacent slough.

[4] Excessive use caused by porous subsoil.

[5] Considerable loss through and over outside levee into adjacent slough.

COOPERATION WITH RAILROAD COMMISSION AND COMMISSIONER OF CORPORATIONS.

Under the terms of the Public Utilities Act it is necessary for a water company operating as a public utility to secure a certificate of public convenience and necessity from the Railroad Commission before beginning the construction of a system or extending an existing system. It is likewise necessary for a water company not operating as a public utility to secure a certificate from the Commissioner of Corporations before selling its stock or other securities in raising money to construct its system.

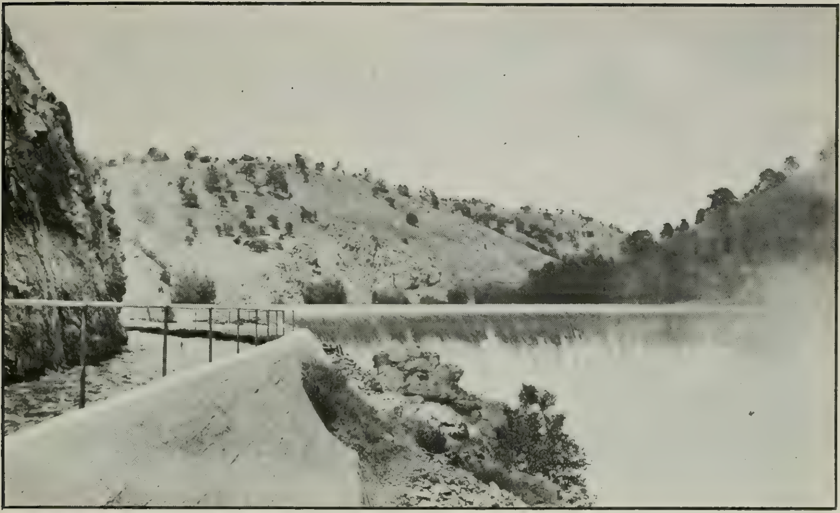
The Water Commission has been cooperating with the two other state offices in determining the amount of water available and the general feasibility of such projects.

COUNTY COOPERATIVE WORK.

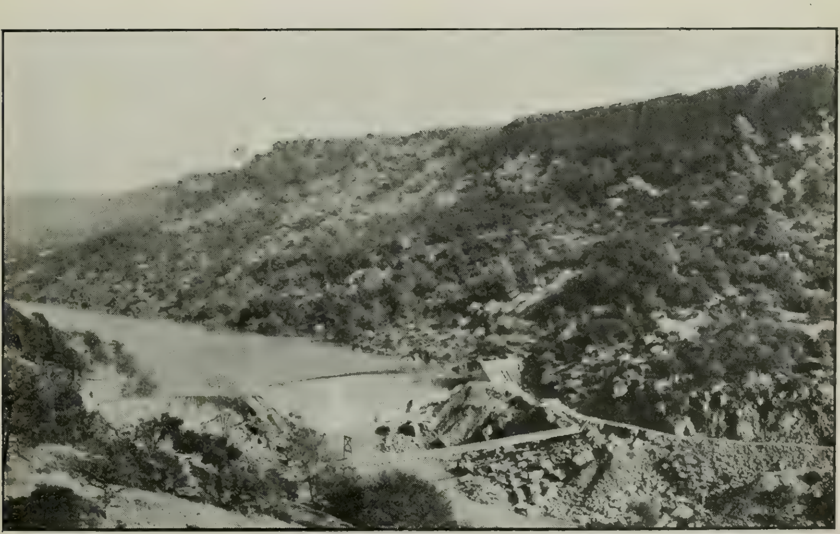
The city and county of Los Angeles has been doing some cooperative work of its own in connection with the Forest Service and the Weather Bureau. The importance of having reliable stream gage and precipitation data on the rivers of the state is becoming more and more realized by public officers in the construction of public works and in the control of flood waters.

As a result of an exhaustive study of damage done by flood waters and of their conservation and control in Los Angeles County, there has been begun a cooperative study of stream discharges from the Angeles National Forest into the stream system of that county, with the collection of extensive precipitation records. This work is being done under the direct supervision of Mr. F. H. Fowler, district engineer of the Forest Service, in cooperation with the officers of the United States Geological Survey and Weather Bureau. The expense is being borne jointly by the federal departments and the county of Los Angeles, the supervisors of the latter having made an appropriation for the work. Realizing the great value in thus securing an adequate and reliable measure of the flood discharges and the waste of waters in this way, extension of this cooperative work is being requested by other counties in the southern part of the state. In Los Angeles County records have been obtained from the following watersheds: Pacoima, Tejunga, Arroyo Seco, Little Santa Anita, Big Santa Anita, Monrovia or Sawpit and San Dimas.

PLATE VI.



La Grange dam, showing Modesto canal at left. Headworks of Modesto and Turlock irrigation districts.



Holding back the waters.—Goodwin dam, Stanislaus River (South San Joaquin and Oakdale irrigation districts).

IRRIGATION DISTRICTS OF CALIFORNIA.

Including Old and New Ones and List of Most Important Private Irrigation Enterprises.

The status of irrigation districts in California has changed greatly in the past few years. Few of the districts organized under the original Wright Act succeeded and many were colossal failures, but with all the mistakes and losses the fundamental idea seemed to have been correct and has persisted under various changes until found as in the Irrigation District Act of today. Having been amended at various times from 1887, when it was originally passed, until 1895, it was rewritten in 1897, enlarged and reenacted as a new act. Many further amendments have been made since then and numerous supplemental acts have been passed, the most recent having to do with the financial and state control features. As shown by Frank Adams, manager of the Office of Public Roads and Rural Engineering, United States Department of Agriculture, this is not the form of irrigation organization that is numerically strongest in California, nor is it very likely to attain numerical precedence over the cooperative or mutual irrigation company. It is, however, the form of organization that is most generally considered, both for new and for the reorganization of old irrigation development, and it is the form that has been most largely employed in this state in the most important new irrigation development and reorganization of the present decade.

Three additional district acts were passed in 1913, but these were drawn to meet special situations and should not be confused with the general California Irrigation District Act of 1897 which is the successor to the old Wright Act.

Up to July 1, 1915, 57 irrigation districts had been organized in California since the passage of the Wright Act in 1887, nine of which were formed since the passage of the rewritten act of 1897. Out of these 57 there are 17 still in existence and 12 are operating. The other five are in various stages of reorganization. Since the organization of the Water Commission the state has witnessed the formation of many new districts and the initiation of a number more, it being only a matter of the necessary time required to complete the latter before they will take their place in the list of regularly organized districts.

The Seventeen Old Districts.

The following is a list of the old districts still in existence which were formed under the original Wright Act or its successor:

District	County	Area in acres
Anderson-Cottonwood	Shasta and Tehama	25,000
Brown's Valley	Yuba	45,000
Oakdale	Stanislaus	75,000
South San Joaquin	San Joaquin	70,000
Waterford	Stanislaus	13,000
Modesto	Stanislaus	52,000
Turlock	Stanislaus	175,500
Alta	Fresno and Tulare	130,000
Tulare	Tulare	35,000
Alpaugh	Tulare	2,500
Little Rock Creek	Los Angeles	4,200
Big Rock Creek	Los Angeles	700
Black Rock	Inyo	1,750
Walnut	Los Angeles	850
La Mesa, Lemon Grove, and Spring Valley	San Diego	14,750
San Ysidro	San Diego	475
Imperial	Imperial	524,000

Irrigation Districts Formed or Initiated Since the Organization of the State Water Commission.

The following table shows the activity in the formation of irrigation districts in the past year and a half since the organization of this commission. In some cases the districts have already been formed, while in others they are in various stages of organization or water has been applied for by individuals acting as trustees for proposed districts. Of those shown in this table only two, namely, the La Mesa, Lemon Grove and Spring Valley and the Oakdale, are applications of previously organized districts applying for additional supply.

Application No.	Applicant	Source	County	Amount applied for		Area to be irrigated	Estimated cost	Status
				Second feet	Storage, acre-feet			
8 and 238	La Mesa, Lemon Grove and Spring Valley	San Diego River	San Diego	44		14,794	$1,232,500	Pending.
32	Terra Bella	Deer Creek	Tulare		25,000	12,500	900,000	Pending.
61	Olaf F. Severson, Tr.	American River	Sacramento	100		15,000		Rejected.
77 and 504	Oakdale	Highland Creek, Stanislaus River	Tuolumne, Alpine, Stanislaus		62,836	74,146	1,100,000	Pending.
85a and 85b	Southern Lassen	Long Valley and Last Chance creeks	Lassen	450	119,250	22,565	600,000	Pending.
92, 93 and 476	Paradise	Little Butte Creek, Feather River	Butte	141	23,090	11,100	500,000	Pending.
138	Carmichael	American River	Sacramento	15		3,100	52,250	Permit issued.
189	Paul Bresee, Trustee	Colorado River	Riverside	1,110		177,550	8,877,500	Pending.
228 and 229	Lindsay-Strathmore	South Fork Kaweah River, North Fork Tule River	Tulare		18,000	15,500	570,000	Pending.
234	Madera	San Joaquin, Fresno and Chowchilla rivers, Sand, Cottonwood, Hildreth, Dry and Mariposa creeks	Madera	5,000	380,000	400,000		Pending.
244 and 454	Princeton-Codova-Glenn	Sacramento River	Glenn	200		21,000	32,500	Pending.
269, 280, 281, 293, 426, 427	Honey Lake Valley	Willow Creek, Susan River, Skeedaddle Creek, Butte Creek, Horse Lake, Eagle Lake	Lassen	700		50,000		Pending.
301	Westside	Old River	San Joaquin	225		11,380	285,000	Pending.
317, 350, 386, 387	Barclay McCowan, Tr.	Kern River, Caliente Creek and Walker Basin	Kern	35,600	1,000,000			Pending.
353, 354, 355	Tulare Lake	Kern River, S. Fork Kings River, Tule and Kaweah rivers	Kings	5,000	300,000	250,000		Pending.
360	M. F. Tarpey, E. R. Reed et al.	Kings River	Fresno, Tulare and Kings	20,000	600,000	1,200,000		Pending.
364	Sheep Creek	Sheep Creek and Upper Swearthout Canyon	San Bernardino	6	3,000	15,360		Pending.
401 and 495	Long Valley Creek	Long Valley Creek and Little Truckee River	Lassen	650	135,000	34,345	1,000,000	Pending.
438	Mojave River	Deep Creek and W. Fork Mojave River	San Bernardino	300	100,000	50,000		Pending.
499 and 509	W. B. Baker, F. H. Merril et al.	Whitewater River, Mission Creek, Big, Little and Dry Morongo creeks, Snow, Pipes and Antelope creeks	Riverside		240,000			Pending.
512	Eastside	Scott River	Siskiyou	175				Pending.
519	Dixon	Putah Creek	Solano		325,000	55,000		Pending.
520	Inyokern Valley	Whitney Creek and South Fork Kern River	Tulare		450,000			Pending.

PRIVATE IRRIGATION SYSTEMS.

The following are a few of the most important of the large number of private irrigation systems in various parts of the state:

Those Established Prior to Water Commission's Organization.

San Diego Flume Company. This system, which is typical of the coast region of southern California, irrigates about 7,000 acres to the north and east of the city of San Diego from the San Diego River and the storage reservoirs.

Riverside Water Company and Gage Canal Company. These two systems serve the valuable lands between the south bank of the Santa Ana River and the hills from the section east of Colton, through the Riverside district, in San Bernardino and Riverside counties, but are in no way connected with each other. The value of the entire system, which includes the municipal supply of Riverside, is estimated at $2,500,000, the irrigating portion alone being valued at nearly $1,000,000.

The Gage Canal Company diverts water from the Santa Ana River; its flow is largely augmented during the summer by numerous artesian wells and pumping plants.

Kern County Land Company. The Kern County Land Company is interested in numerous canal projects and corporations, taking water from both sides of Kern River, irrigating lands in what is called the Kern delta, lying south, west and southwest of Bakersfield. Of these lands there are about 80,000 acres in alfalfa, 12,000 acres in grain, 10,000 acres in pasture, wild grass, and 15,124 acres in orchards, vines, gardens, etc.

Kern Valley Irrigation Company. The Kern Valley Water Company's canal, belonging to Miller & Lux, irrigates the riparian lands lying between Buena Vista Lake and Tulare Lake. About 63,000 acres of this land are in cultivation, mostly in alfalfa.

Fresno and Consolidated Canals Company. These two systems, although kept separate, are operated by the same people and cover practically all the irrigated lands in Fresno County, amounting to about 360,000 acres. The points of diversion for the various canals are all along the west bank of the Kings River, close to where it enters the valley.

The Consolidated includes the Fowler switch and the Centerville and Kingsburg canals, as well as a majority of the stock of the Emigrant canal. The latter is on the lower Kings River, and diverts water from the river six miles west of Kingsburg to irrigate lands on the Laguna de Tache Rancho, which belongs largely to this company.

The Consolidated has later priorities on the river, and its flow is cut off from the middle of June to August 1st. The lateral ditches are owned and controlled by the irrigators. No measurements are made to users, each irrigator taking what he needs in accordance with the rights held by him. Considering its area, it is the most highly developed district in the state.

The San Joaquin and Kings River Canal and Irrigation Company. This system diverts water from the west bank of the San Joaquin River about one and one-half miles north of the town of Mendota, in Fresno County. It is the oldest large canal in the valley, having been organized in February, 1871. The area tributary to it extends for seventy miles along the west bank of the river, in Fresno, Merced, and Stanislaus counties. The company belongs to Miller & Lux, who have riparian rights on the river, and their own lands are very largely included.

The Crocker-Huffman Land and Water Company—The Merced River furnishes the supply for the 220,000 acres irrigable from its canals. These lands extend from the foothills, near where the river enters the valley, to the country surrounding the city of Merced and between that city and Livingston.

The Butte County and the Sutter County Canals. These two canals are controlled by the same people, using the same main canal, but are separately incorporated. The Butte canal serves the area in Butte County and the Sutter canal serves that in Sutter County. This combined system covers about 80,000 acres, 30,000 in Butte and 50,000 in Sutter County, composed of lands between the Feather River, the Marysville Buttes, and the swamp lands along the Sacramento River south to where the slough which leaves the Feather River near Marysville joins the Sutter basin.

Sacramento Valley Irrigation Company. This is an enterprise, backed by Eastern financial interests, which have secured the rights of the Central Irrigation District by the purchase of all outstanding district bonds for 35 per cent of their par value. They have secured control, also, of 100,000 acres in the above district, and are carrying on extensive work in preparing for the irrigation and drainage of the 225,000 acres which will be included in their system.

Private Irrigation Enterprises Since the Formation of the Water Commission.

The preceding paragraphs give some of the largest of the private irrigation systems in operation before the commission came into existence. Since that time, several private individuals or concerns have applied to the commission for permits to appropriate water. These are not irrigation districts in the legal sense of the term, but are enterprises by which it is proposed to water large private holdings, or sell water to consumers or both. As in all other cases, the commission can not foretell how many of them will be carried to actual completion, but their initiation indicates the general irrigation activity in this particular phase. The applications follow:

The Sutter-Butte Canal Company. One hundred cubic feet per second of the waters of Hamilton Slough, 40 cubic feet per second of the waters of Old and New Dry creeks, and 20 cubic feet per second of the waters of an unnamed slough, for the irrigation of approximately 16,600 acres of land in the vicinity of Richvale, Biggs and Gridley, in Butte County. Estimated cost, $18,000. (This application is for additional supply for an already established concern.)

The Cheney Slough Irrigation Company. One hundred sixty-two cubic feet per second of the waters of the Sacramento River for the irrigation of approximately 10,700 acres of land in the vicinity of Colusa. Estimated cost, $50,000.

The Panoche Canal Company. One thousand cubic feet per second of the waters of the San Joaquin River for the irrigation of 77,000 acres of land in Fresno County. Estimated cost, $500,000.

Earl R. Leib. Thirty-one cubic feet per second of the waters of Duck Lake, Desolation Lake, Lake Muriel, and two unnamed lakes in Fresno County. It is proposed to divert this water over into the Owens River watershed, to be used for the irrigation of approximately 2,200 acres of land in the Owens River Valley. To compensate for this water, it is proposed to divert water from Thousand Island Lake, Garnet Lake, Lake Italy, Rose Lake, Marie Lake, Wanda Lake, Martha Lake and three unnamed lakes, all in Fresno County. Estimated cost, $35,000.

The Moulton Water Company. One hundred sixty-six cubic feet per second of the waters of the Sacramento River, for the irrigation of approximately 15,700 acres of land in Glenn County. Estimated cost, $15,000, in addition to canals and laterals already completed.

W. F. Fowler. Two hundred fifty cubic feet per second of the waters of the Sacramento River, for the irrigation of approximately 14,100 acres of land in Glenn County. Estimated cost, $180,000.

George H. Reed. One hundred cubic feet per second of the waters of New River, for the irrigation of land in Imperial County. The area to be irrigated and the cost of the proposed project have not been presented.

The Tulare Water Company. Two thousand cubic feet per second of the waters of the Kern River, for the irrigation of approximately 78,800 acres in Kern County. Estimated cost, $200,000.

Leon Bly. Forty-two cubic feet per second of the waters of Eagle Lake, 500 cubic feet per second of the water of Balls Canyon and Willow Creek, and 20 cubic feet per second of the waters of the Susan River, for the irrigation of approximately 19,200 acres of land in the Honey Lake Valley, in Lassen County. It is proposed to construct a storage reservoir of approximately 50,000 acre-feet capacity in Balls Canyon. Estimated cost, $300,000.

M. L. Hazzard. Two thousand two hundred fifty cubic feet per second of the waters of San Dimas and Cow canyons, for the irrigation of the San Dimas Heights tract in Los Angeles County. Estimated cost, $350,000.

The Llano Del Rio Cattle Company. Waters of Big Rock Creek, for the irrigation of approximately 4,700 acres of land in the vicinity of Llano, Los Angeles County. It is proposed to construct a storage reservoir of 7,500 acre-feet capacity. Estimated cost, $130,000.

Frank K. Mott. One hundred thousand acre-feet per annum of the waters of Ash Creek, for the irrigation of approximately 50,000 acres of land in Modoc County. Estimated cost, $275,000.

J. B. Clover. Eighty thousand acre-feet per annum of the waters of Parsnip Creek and the South Fork of Pit River, for the irrigation of approximately 40,000 acres of land in Modoc County. Estimated cost, $250,000.

G. H. Ayres. Seven hundred cubic feet per second of the waters of Cowhead Lake and Twelve Mile Creek, for the irrigation of approximately 40,000 acres of land in Modoc County. Estimated cost, $450,000.

E. H. Dodge. Five hundred cubic feet per second of the waters of Leevining Creek, for the irrigation of approximately 50,000 acres of land in Mono County. Estimated cost, $200,000.

The Mono Canal Company. Seven hundred fifty cubic feet per second of the waters of Rush and Leevining creeks, for the irrigation of approximately 50,000 acres of land in Mono County. Estimated cost, $500,000.

The California Farm and Irrigation Company. Three hundred seventy-five cubic feet per second of the waters of the Colorado River for the irrigation of approximately 59,100 acres of land in the vicinity of Blythe, Riverside County. Estimated cost, $2,300,000.

The Atascadero Mutual Water Company. Thirty cubic feet per second of the waters of the Salinas River, for the irrigation of approximately 23,000 acres of land in San Luis Obispo County. It is proposed to store 60,000 acre-feet of water. Estimated cost, $750,000.

E. G. Hopson. Forty cubic feet per second of the waters of Cow Creek for the irrigation of approximately 3,000 acres of land in Shasta County. Estimated cost, $100,000.

E. W. Pereira. One hundred twenty-five cubic feet per second of the waters of Scott River, for the irrigation of approximately 10,000 acres of land in Siskiyou County. Estimated cost, $48,500.

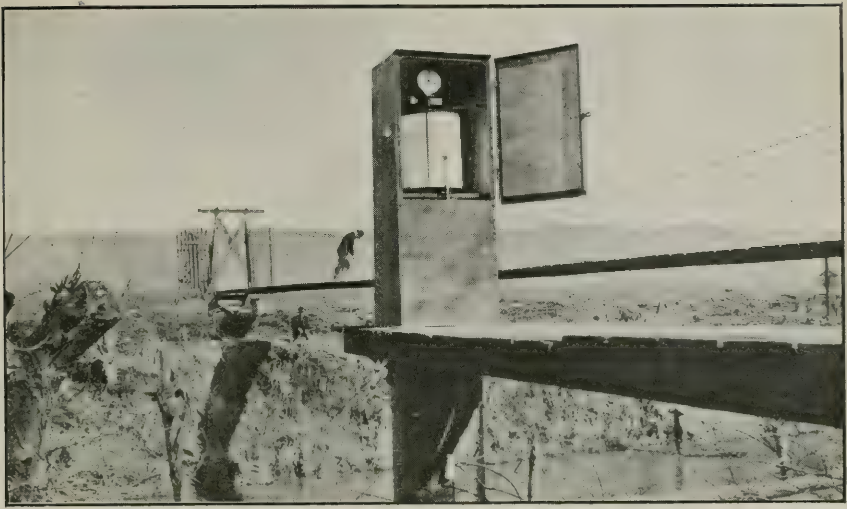
E. G. Hopson and *A. L. Conrad.* One hundred thirty cubic feet per second of the waters of Red Bank Creek, for the irrigation of approximately 10,000 acres of land in Tehama County. It is proposed to store 30,000 acre-feet of water. Estimated cost, $400,000.

The Sespe Light and Power Company. Two hundred fifty cubic feet per second of the waters of Sespe Creek, for the irrigation of approximately 50,000 acres of land in Ventura County. Estimated cost, $3,000,000.

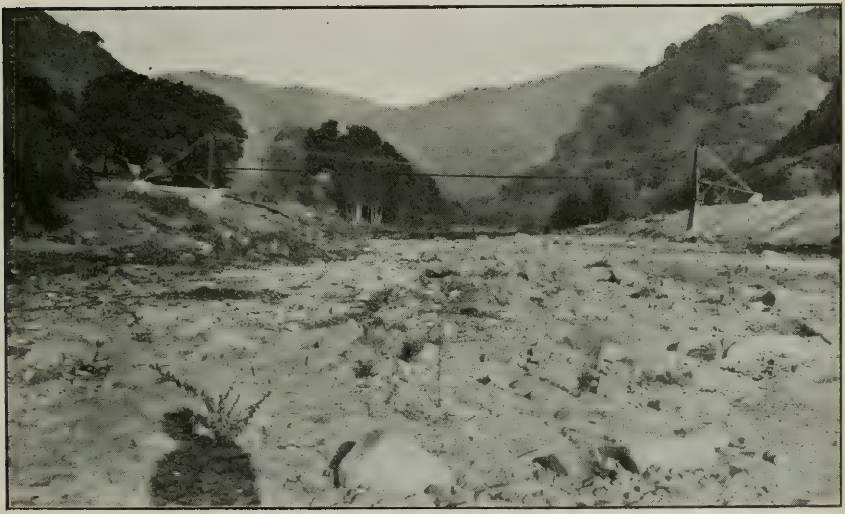
R. Whitehead. One hundred fifty cubic feet per second of the waters of the Feather River and Plumas Lake, for the irrigation of approximately 6,300 acres of land in Yuba County. Estimated cost, $50,000.

The Farm Land Investment Company. One hundred fifty cubic feet per second of the waters of the Feather River, Plumas Lake and Messick Lake, for the irrigation of approximately 6,400 acres of land in Yuba County. Estimated cost, $31,000.

PLATE VII.



Automatic recording gage and measuring bridge at State Water Commission stream gaging station on Alameda Creek two miles above Alvarado.



Looking up Alameda Creek at stream gaging station of State Water Commission in Niles Canyon.

A NOTABLE CASE.

Spring Valley Water Company and Alameda County Water District Ask Commission to Settle Their Long Drawn Out Differences.

Some idea of the importance of the work and the scope of the Water Commission may be had from what is considered one of the most notable matters which has come before the commission since its organization, namely, the submission to it, as referee, of the long drawn out troubles and litigation between the Spring Valley Water Company of San Francisco and the Alameda County Water District of Alameda County.

Resulting from an injunction obtained by the water district to prevent the Spring Valley Company from taking more water or maintaining storage reservoirs on Alameda Creek, an agreement was signed by these two parties on September 1, 1916, to refer the controversy to the State Water Commission for arbitration. By this agreement the commission is allowed a three-year period to investigate physical conditions in the territory involved and to collect data for reaching an intelligent and fair determination of the conditions upon which the water company may increase its diversions or store water with due regard to the rights of the landowners in the district. The object of the agreement is to reach a settlement whereby it shall be made possible to conserve and use waters, which are not now beneficially used, without damaging the underground water supply of the lands in the district; or, if it is not possible to prevent such damage entirely, to compensate the owners of the damaged land to the extent such damage is not prevented, the water company to make such compensation as a condition of the exercise of any rights or privileges accorded to it by such settlement. Under the terms of the agreement, funds amounting to $10,000 per annum were placed at the disposal of the commission for this purpose by the Spring Valley Water Company.

The Alameda County Water District is an organization of owners of about 53,000 acres in the vicinity of Niles. The area lies west of the town, between the foothills of the Coast Range Mountains and San Francisco Bay. It includes the towns of Niles, Irvington, Centerville, Newark, Alvarado and Decoto. Its boundaries are the supposed limits of the influence of Alameda Creek upon the ground waters from the ay shore region.

This territory is very productive and land values are high, being planted to orchards, gardens and a considerable acreage to sugar beets, while toward the bay the land is used largely for dairying.

From 1910, when it is estimated that there were less than 800 pumping wells in the district, the number has increased to approximately 1,400 at the present time.

The lower reaches of Alameda Creek traverse the northerly portion of the district and are regarded by the district as a chief source of replenishment to the ground waters of this territory. The flow of the creek is exceedingly variable, reaching a volume of as high as 20,000 second-feet for winter periods, falling to a very few second-feet in the summer.

The Spring Valley Water Company owns large holdings on Alameda Creek and its tributaries, particularly on the upper watershed. It has also acquired many water rights along the entire course of the channel. Preparations are being made to increase its diversions by construction of a storage reservoir on Calaveras Creek, just below its junction with the Arroyo Hondo which takes its rise near Mount Hamilton, Santa Clara County. The construction of the dam for this reservoir will probably be completed in 1918.

The importance of these investigations of the underground waters of the Niles "Cone" may be understood when it is realized that the study of underground waters is comparatively in its infancy. The Geological Survey has conducted certain studies, but they have been along far more general lines than are contemplated in this particular investigation. The result, therefore, of the findings of the Water Commission will no doubt be of general interest and will be watched very carefully by engineers and all interested in the use of water. The comparatively sparse settlement of the country and the heretofore sufficient supply of surface waters has not demanded the attention that will finally have to be paid to underground waters in the future. The Niles "Cone" investigations, therefore, promise to be of great value to the existing knowledge on an increasingly important subject.

ASCERTAINMENTS AND ADJUDICATIONS.

A Matter of Much Importance That Will Be Furthered by the Passage of Amendments to the Present Act.

The Water Commission Act gives the commission authority to ascertain the relative rights of the various claimants to the use of water from a common source of supply. To become binding, such ascertainment must be approved by a superior court in an action initiated either by the state or by one of the claimants. The court may also approve the ascertainment in a modified form. Through this action by the court the ascertainment becomes an adjudication.

For reasons given in this report under the caption "Discussion of the Necessity of the Foregoing Proposed Amendments," the commission has undertaken no regular ascertainments under the terms of section 24. It has uniformly advised those seeking an ascertainment to bring action in the regular way and ask that the matter be referred to the commission for investigation as referee.

Judge Burroughs of the Superior Court of Lassen County has referred to the commission the following three cases:

August Anderson vs. *Union Land & Stock Company;*
McKissick Cattle Company vs. *Union Land & Stock Company et al.;*
Johnson et al. vs. *Hill.*

The first two cases deal with the waters of Red Rock Creek and the third with the waters of Willow Creek, both in Lassen County.

Engineers of the commission have made hydrographic surveys of each of the two stream systems. The completed reports will be submitted to the court as evidence of the physical data involved.

HOW AN APPLICATION IS ACTED UPON.

Progress of an Application Through the Commission. Of Interest to Prospective Appropriators.

An application to appropriate water under the terms of the Water Commission Act takes the place of the notice of appropriation provided for in section 1415 of the Civil Code. Just as the date of posting notice fixed the priority of the old right, so the date of filing application in the office of the Water Commission fixes the priority of the new right.

The everyday routine work of the commission is that of "acting upon" applications from the time that they enter the secretary's office until they are finally approved, withdrawn or rejected, as the case may be. It is an interesting procedure, both to the average person desirous of information and to prospective applicants. The work calls for many activities in various directions: checking, examinations, investigations, computations, field work from an engineering standpoint, legal considerations, correspondence, systematization, and a host of other phases follow the progress of an application through the commission.

When an application is first received it undergoes a general checking up. Some applications are in form, but very few of them. A great majority are defective in some or many particulars. The work then is to get these perfected, and to do so while not holding up the work and consideration on the application as a whole. There are many things which are attended to while awaiting the information on those points which are incorrect or lacking. The amount of water which an applicant asks permission to use is in many cases out of all proportion to his requirements. As in the filing of old notices of water appropriation, some seem to conclude that the more they ask for the better, and that they may as well have more than enough, without considering what such a condition would finally lead to. The commission endeavors to determine the amount of water that can be actually placed to beneficial use in each particular case, and this often requires a great deal of correspondence or investigation of one kind or another to determine. Although the commission has practically standardized the amount of water required to irrigate an acre of land for usual culture under normal conditions, still no two applications are exactly alike, and each must have its own special consideration.

A great deal of effort is often expended in getting an applicant to properly locate his point of diversion, that point from which he takes his water from a stream or other source. If this point is not fixed with some degree of exactness, future trouble may ensue over the water right. As the expense of an actual survey might be very burdensome to the small user, the rules and regulations governing applications specifically state that surveys need not be made in connection with applications for three cubic feet per second or less. In cases of large appropriations, much labor is required in the examination of the data of the whole project, which may be a big power, irrigation, mining or municipal enterprise. Through the cooperation of the commission with various other agencies a great many applications require that matters relating to them be taken up with these agencies. If the application is for power, the District Forester of the United States Forest Service must be notified, and if an application for any purpose is within a national forest certain information is asked of the Forest Supervisor. By working arrangement with the United States Geological Survey stream measurements and flow may have to be obtained.

When an applicant applies for the use of water, his application immediately becomes of importance to others on the same stream who have appropriated water before him. For that reason the commission attempts to get information in regard to as many of these prior appropriators as possible for the purpose of sending them notices that application has been made. In many cases this is difficult or impractical. The applicant himself is requested to give the names of as many as possible of these prior appropriators who may be below his proposed point of diversion, but in many instances he does not know, nor has he the means to ascertain. The postmasters at the various offices nearest the points of diversion specified in applications are requested to post in prominent places in their offices forms of notices sent out by the commission, and these usually give excellent results. These notices ask prior appropriators to make protests, if they have any, against the appropriation in question in order to assist the commission in determining if any unappropriated water exists. This procedure is a matter of ''safety first'' for the applicant, for it behooves him to know before incurring great expense just what the conditions are which surround him. This process may also save much litigation to all concerned, and this has been one of the important and fixed policies of the commission —that, as a public body representing the people, it shall endeavor in every manner possible to clear up misunderstandings and possibilities of future litigation and bring about satisfactory compromises.

Many of the applications before the commission are for the waters of springs and small mountain streams or washes for the irrigation of homestead or desert land entries. Where the approval of such applications will not interfere with other users, the commission issues a permit even though it be known that the water supply is deficient. This is done on the theory that such entrymen should be allowed to do what they can with the source of supply. The attitude of the commission is different, however, in regard to those enterprises where parties other than the applicant are to use the water appropriated. In such cases the commission will refuse to grant the permit unless it is reasonably certain that sufficient water is available to make the project feasible.

In issuing a permit definite dates are fixed for the beginning of construction, for the completion of construction and for the complete application of the water appropriated to beneficial use. It is within the powers of the commission to revoke a permit in cases where reasonable diligence is not being exercised in construction work. The idea of "holding water rights" without pushing construction work in a businesslike manner thus becomes a mere fiction. When the construction work has been completed and the water applied to a beneficial use, an investigation is made by a representative of the commission, and, if the conditions of the permit have been reasonably fulfilled, a license is issued.

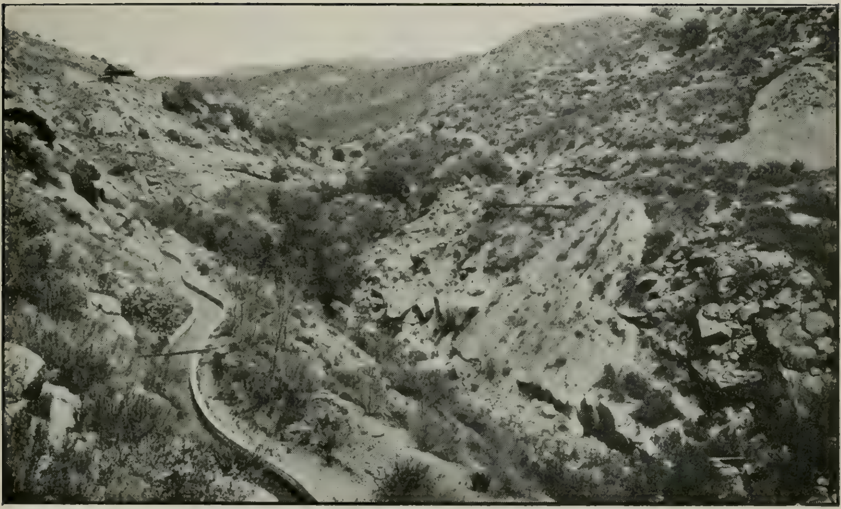
APPLICATIONS UNDER SECTION TWELVE.

Section 12 of the Water Commission Act authorizes the commission, upon the application of any appropriator of water under an appropriation made and maintained according to law prior to the passage of the act, to prescribe the time within which the full amount of water appropriated shall be applied to useful or beneficial purposes.

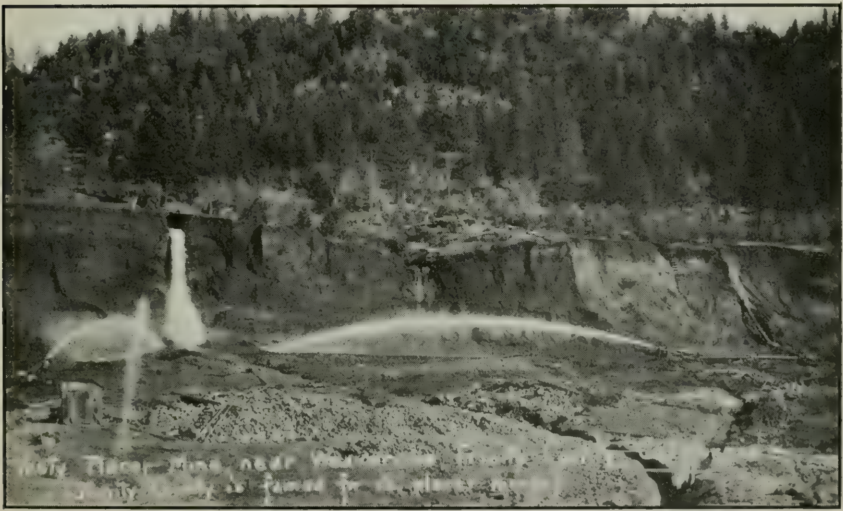
But six applications have been made under this section, two of which have been granted, two rejected and two are still pending.

In passing upon such applications the commission is restricted to the matter of reasonable diligence and can not go into the question of water supply or feasibility of the project. The attitude of the commission towards reasonable diligence in construction work is clearly shown elsewhere in this report under the caption of "Water Rights in California."

PLATE VIII.



Uses of water—municipal supply. Dulzura conduit at Barrett dam site, Cottonwood Creek. Water supply system, city of San Diego.



Uses of water.—Hydraulic mining still practiced where it does not affect navigation, such as on the Trinity River.

TABULATED LIST BY COUNTIES OF APPLICATIONS SUBMITTED TO THE COMMISSION.

Showing Every Application Submitted to the Commission and Information Regarding Same.

Up to December 1, 1916, the commission has received 531 applications for the appropriation of water: 435 for agricultural purposes, 55 for mining, 34 for power and 7 for municipal. Permits have been granted for 192 applications, 39 applications have been withdrawn by applicants, 50 rejected by the commission, and the remaining 250 are now pending in various stages. Of the applications on which permits have been granted, 162 are for agricultural purposes, 23 for mining and 7 for power. On four applications on which permits have been granted construction work has been completed and the water applied to the proposed use and licenses have been granted. Three of these licenses are agricultural and one power.

While California ranks first in mining and second in electric power of the states of the union, the greatest recent development since the organization of the Water Commission has been along irrigation lines. A glance at the map in this report, which gives the applications of all classes and their locations, together with the tabulation of said applications by counties, on the following pages, will show that over 90 per cent of all water applied for has been for irrigation as follows:

For irrigation, 91,360 second-feet	93.0 per cent
For power, 4,892 second-feet	5.0 per cent
For mining, 1,624 second-feet	1.7 per cent
For municipal, 257 second-feet	0.3 per cent

The map shows the sections of the state which have been most energetic in their demands for water, and it must be remembered that this is the demand only for the past year and a half. Thousands of water rights were in existence before the organization of this commission, of which no record is here given.

Many of the large projects which are shown as pending are necessarily slow in procedure, due to the amount of preliminary investigation and work required and the expenditures involved. The unsettled status of world affairs generally has interfered with the perfection of many of these larger enterprises. However, their initiation gives some indication of the vast amount of activity which is to follow in the prosecution of these projects and of the consequent prosperity of the state. This prosperity will finally be greatest in the intensified production of the lands brought under irrigation which will be permanent, but current prosperity is indicated in several directions as a result of employment of labor, use of construction materials of various kinds, transportation, machinery and equipment of various characters, and supplies of many kinds incident to such activities. In addition, many large enterprises have no doubt been deterred from being initiated on account of unstable conditions, which will later be carried to completion. The estimated expenditures on some of these projects alone run into millions of dollars, which gives some idea of the magnitude of all of these contemplated activities combined.

A glance at the tabulation of the counties of Butte, Glenn, Colusa, Yolo, Sutter and Yuba will show something of the extent of the new rice culture in the state, these being the six principal rice counties, and diversions of water therein have been mostly for culture of that cereal. However, Kern, Fresno, Tulare, Kings, Merced and Stanislaus counties have some diversions for this purpose, although in these latter sections most of the rice is being irrigated from previous diversions or from wells.

In the tables given the cost of many of the diversions can not be accurately obtained from the column headed "Estimated Cost." These costs may be approximate in the case of enterprises requiring detailed engineering data, but in many of the others the estimates bear no correct relation to the number of acres to be irrigated as shown by the average cost of putting water on land. For instance, the applicant may state the estimated cost of his expenditure for irrigating 300 acres of land as $300, or $1.00 per acre. This may include only just such material as he has to buy outright for cash, not counting the labor which he may perform himself. Or it may be that he already has water on his land and is applying for an additional amount required and has already constructed the necessary works, and the estimated cost given by him is for such additional equipment as he will have to provide. However, he states in his application the total number of acres he is watering, which does not give the true idea of the proper cost to irrigate the amount of land specified.

In many cases, as the tables will show, application is made for a larger amount of water than the applicant requires for the acreage he proposes to irrigate. In other words, the relationship of the duty of water to the area to be irrigated is out of proportion. This, however, is corrected by the commission which, in issuing a permit, takes into consideration the duty of water as required by the particular case and allows applicant the proper amount of water accordingly.

Following is a complete list of the applications for all purposes submitted to the commission since its organization in March, 1915, to December 1, 1916, the list being arranged by counties for easy reference:

ALAMEDA

Application No.	Permit No.	Applicant	Source	Agricultural	
				Second feet	Acres
		None			

ALPINE

77		Oakdale Irrigation District	Highland Creek		74,146
77a		Utica Gold Mining Co. and Hobart Estate Co.	Highland Creek		

AMADOR

159		John Sherman Bagg	Mokelumne River		

BUTTE

10		J. M. Shannon and M. B. Pulley	Butte Creek		750
40		Sacramento Valley Rice Co.	Old Dry Creek	20	480
83	10	J. W. Thatcher, H. M. Thatcher and H. C. Hansen	Empire Creek		
92		Paradise Irrigation District	Little Butte Creek	66	11,100
93		C. S. Compton, D. L. Whisman and C. M. Burket	W. Branch Feather River	75	10,000
123	68	Eugene Rutherford	Hamilton Slough	10	640
150		J. F. Littlefield	Middle Butte Creek		
200		Sutter-Butte Canal Co.	Hamilton Slough	50	8,000
206		J. W. Browning	Butte Creek		3,200
208		Sutter-Butte Canal Co.	Hamilton Slough	50	4,500
209		Sutter-Butte Canal Co.	Unnamed slough	20	1,090
210		Sutter-Butte Canal Co.	Old and New Dry creeks	40	3,000
429		Eugene Rutherford	Unnamed slough	10	560
476		Paradise Irrigation District	Little Butte Creek	66	11,100
502		A. C. Tucker	Berry Creek	1	160

CALAVERAS

		None			

COLUSA

18	29	J. F. Mallon and R. E. Blevins	Sacramento River and Colusa Basin	130	5,240
22		The Melone Company	Colusa Basin	18	1,100
27a	32	Moulton Water Co.	Sacramento River	31	3,380
186	72	Blevins & Mallon Ditch Co.	Sacramento River	42	1,800
190		Mrs. B. Graham	Sacramento River	31	1,100
230		Cheney Slough Irrigation Co.	Sacramento River	162	10,660
236		James Mills Orchard Corp. and Esperanza Land Corp.	Stone Corral Creek	20	4,820
241		The Melone Co.	Colusa Basin	18	960
279	92	George Allen	Recl. Dist. 108 Drain. Ditch	3	140
297	101	G. W. Pratt	Sycamore Slough	3	250
380	170	Ulysses S. Tolbert	Grapevine Creek	0.25	20
416		James Mills Orchard Corp. and Esperanza Land Corp.	Stone Corral Creek	20	4,820

CONTRA COSTA

411	177	Oscar H. Hershey	Springs and flood waters		20
412	178	Katherine B. Hershey	Spring and flood waters		5
465		Peoples Water Co.	San Pablo Creek		

Municipal		Mining		Power		Storage, acre feet	Estimated cost	Status
Second feet	Population	Second feet	Character	Second feet	Theoretical h.p.			
COUNTY.								
COUNTY.								
						62,836	$1,100,000	Pending.
					19,000	62,836	1,100,000	Pending.
COUNTY.								
200	500,000							Rejected.
COUNTY.								
								Rejected.
							$3,600	Withdrawn by applicant.
		5	Placer				1,500	Permit issued.
						6,600	250,000	Pending.
						3,487	150,000	Pending.
							200	Permit issued.
		2.5	Drift gravel				2,500	Withdrawn by applicant.
							3,000	Pending.
								Withdrawn by applicant.
							6,000	Pending.
							2,000	Pending.
							7,000	Pending.
							2,000	Pending.
						19,600	350,000	Pending.
							270	Pending.
COUNTY.								
COUNTY.								
							$52,000	Permit issued.
								Rejected.
							4,000	Permit issued.
							11,000	Permit issued.
							5,500	Permit issued.
							50,000	Pending.
								Withdrawn by applicant.
							5,000	Pending.
							1,000	Permit issued.
							1,000	Permit issued.
							100	Permit issued.
							26,500	Pending.
COUNTY.								
						4	$500	Permit issued.
						1	150	Permit issued.
	325,000					40,000	2,000,000	Pending.

DEL NORTE

Application No.	Permit No.	Applicant	Source	Agricultural	
				Second feet	Acres
78	------	J. R. Harvey	Illinois River	----------	----------
205	87	M. D. Graham	Growler Gulch	----------	----------
221	84	Chapman, Cook, Graham, Dressler & Sasse	Davis Gulch	----------	----------
248	------	M. D. Graham	Haden Gulch	----------	----------
339	------	Harry Pattison	Haden Gulch	----------	----------
403	------	M. D. Graham	Granite Gulch	----------	----------
493	------	Ewen Cameron	Coon Creek	----------	----------

EL DORADO

Application No.	Permit No.	Applicant	Source	Agricultural	
				Second feet	Acres
5	------	George H. D. Meyers	Unnamed stream	----------	160
6	------	George A. Newhall	Lonely Gulch Creek	----------	----------
41	9	Geo. M. Dyke, Al Valliere, Joe Elvidge	American Canyon	----------	----------
87	19	W. W. Price	Eau Claire Creek	----------	----------
116	------	Walter J. Harris and Joseph M. Short	McKinney Lake and creek	2.5	190
141	191	A. S. Mangrum	Cathedral Creek	0.2	----------
152	43	Walter K. Fisher	----------	0.025	----------
256	------	E. R. Walker	South Fk. American River	200	----------
408	------	H. Law and N. L. Salter	Unnamed stream	----------	----------
477	------	A. L. Richardson	Eagle Creek	----------	----------

FRESNO

Application No.	Permit No.	Applicant	Source	Agricultural	
				Second feet	Acres
23	------	Panoche Canal Co.	San Joaquin River	1,000	77,000
191	105	Samuel P. Hale	Jackson Creek	2.2	170
191a	106	Samuel P. Hale	Hale's Creek	2.2	170
211	74	John M. Akers	Spring	0.002	----------
258	142	Hill Valley Farms Co.	Hills Valley Creek	2	160
289	99	Charles Koppka	Martinez Creek	2	160
360	------	M. F. Tarpey, E. R. Reed et al.	Kings River	20,000	1,200,000
367	------	Earl R. Lieb, John P. Burke et al.	Duck Lake, Desolation Lake, Lake Muriel and two unnamed lakes	31	2,160
400	------	Earl R. Lieb, John P. Burke et al.	Thousand Island Lake, Garnet Lake, Lake Italy, Rose Lake, Marie Lake, Wanda Lake, Martha Lake and three unnamed lakes		
381	------	James J. Sparr	Spring	----------	----------
388	------	L. A. Nares and I. Teilman	Kings River	----------	----------
451	------	John H. Nichols	Etchegoing Creek	3	120
506	------	City of Coalinga	Waltham Creek	----------	----------

GLENN

Application No.	Permit No.	Applicant	Source	Agricultural	
				Second feet	Acres
27	31	Moulton Water Co.	Sacramento River	166	15,720
244	------	J. Overholtzer	Sacramento River	140	14,000
454	------	J. Overholtzer	Sacramento River	60	7,000
462	------	W. F. Fowler	Sacramento River	250	14,120

HUMBOLDT

Application No.	Permit No.	Applicant	Source	Agricultural	
				Second feet	Acres
76	12	John Holst	Reas Creek	0.6	46
145	36	L. J. Stone	Soldier's Grove Spring	----------	----------
242	169	J. R. Gilbert	Leavy Gulch	----------	----------
255	------	Walter and Christian Terkelsen	Williams Creek	1.5	40
347	128	A. E. Petersen	Coffee Creek and trib.	0.9	70

COUNTY.

Municipal		Mining		Power		Storage, acre feet	Estimated cost	Status
Second feet	Population	Second feet	Character	Second feet	Theoretical h.p.			
								Rejected.
		3	Placer				$250	Permit issued.
		3	Placer				1,500	Permit issued.
		1	Placer				250	Rejected.
		3	Hydraulic				600	Pending.
		3	Placer				1,500	Permit issued.
		50	Hydraulic				25,000	Pending.

COUNTY.

								Withdrawn by applicant.
				5	25		$5,000	Withdrawn by applicant.
		2.5	Placer				300	Permit issued.
				2	13	10	500	Permit issued.
						42	6,000	Pending.
							100	Permit issued.
							75	Permit issued; License No. 2 issued.
						50,000		Pending.
				0.25	10		2,100	Pending.
				1.5	10		1,200	Pending.

COUNTY.

							$500,000	Pending.
							1,000	Permit issued.
							1,000	Permit issued.
							700	Permit issued.
							500	Permit issued.
							200	Permit issued.
						600,000		Pending.
						20,400	35,000	Pending.
								Withdrawn by applicant
				2,000	20,000	600,000	6,000,000	Pending.
							235	Pending.
3	3,500						50,000	Pending.

COUNTY.

							$15,000	Permit issued.
							17,500	Pending.
							15,000	Pending.
							180,000	Pending.

COUNTY.

							$25	Permit issued.
		0.1	Milling				450	Permit issued.
		4.0	Placer				1,000	Permit issued.
							600	Pending.
							300	Permit issued.

IMPERIAL

Application No.	Permit No.	Applicant	Source	Agricultural	
				Second feet	Acres
104	158	Henry J. Lawrence et al.	Palo Verde Lagoon	21.5	1,720
262		Claudie A. Strabley	Cariso Creek	1.25	160
485		George H. Reed	New River	100	
489		Ella J. Bowles	Palo Verde Lagoon	3	160

INYO

3		C. T. Fitzhugh	Cartago, Olancha, Walker and Falls creeks	5	320
14		Ira J. Burnett	Inyo Creek	2	90
17		F. E. Van Cleave	Carrol Creek	4	320
31	14	Olive R. Wilson	Five Mile and Dead Foot creeks	2	320
35		A. L. Myers	Nine Mile Canyon		
36		F. E. Banks	Richter Creek, Diaz Lake	0.5	40
39	15	E. B. Hannsen	Slide Creek and springs	2.5	200
48	42	H. D. Porter	Willow Springs	0.1	5
59		Symmes Creek Dev. Co.	Symmes Creek	10	520
102	16	Charles R. Dugan	Unnamed spring	1.25	120
114		Johann Albars	Bishop Creek	3	40
117		George C. Keough	Ham Canyon	3	130
125		Mary M. Celaya	Lone Pine Creek		
132		Samuel Howard	Scotty's Spring	1	80
147		City of Los Angeles	Big Pine Creek		
148		City of Los Angeles	Cottonwood Creek		
160		J. Asher Cowan	Willow Springs		
175	78	W. H. Jones	Nine Mile Spring	1	80
196	79	John C. Baxter	Nine Mile Creek	3	320
217		Death Valley Cons. Mines Co.	Willow Creek		
220		Edward E. Elder and F. L. Young	Panamint Canyon	2.5	320
265		O. C. Johnson, W. K. Miller and H. Dearborn	Coal Kiln Springs	0.25	
286		O. C. Johnson, W. K. Miller and H. Dearborn	Anvil Springs	0.25	
287		O. C. Johnson, W. K. Miller and H. Dearborn	South Park Spring	0.25	
300	153	Coso Milling Co.	Coso Canyon		
305		F. E. Banks	Richter Creek	1	30
332	148	Harvey H. Hall	Unnamed springs	1.25	160
341		American Trona Corp.	Joe Peterson Creek, Willow Creek, Argus Creek, Parsons Cr. and springs		
389	185	George J. Evans	Hemstead Spring	1.5	320
428		A. Shelly	Funnel Lake Springs	2	160
432		R. D. Owen	Birch Creek	3	160
444		City of Los Angeles	Cartago Creek		
467		George J. Evans	Wancoba Creek and Lead Canyon Springs	2.5	40
468		George J. Evans	Upper Warm Springs	1.25	40
469		George J. Evans	Indian and Squaw Creek	2.5	40
470		J. F. Gordon	Addie Creek		
494		P. A. Blunk, S. E. Ball and Geo. D. Vollmer	Waste water from Skidoo Mill		
507		A. and H. A. Nobles	Unnamed spring		

COUNTY.

Municipal		Mining		Power		Storage, acre feet	Estimated cost	Status
Second feet	Population	Second feet	Character	Second feet	Theoretical h.p.			
--------	--------	--------	--------	--------	--------	--------	$5,000	Permit issued.
--------	--------	--------	--------	--------	--------	--------		Pending.
--------	--------	--------	--------	--------	--------	--------	1,800	Pending.
--------	--------	--------	--------	--------	--------	--------	1,000	Pending.

COUNTY.

Municipal		Mining		Power		Storage, acre feet	Estimated cost	Status
Second feet	Population	Second feet	Character	Second feet	Theoretical h.p.			
--------	--------	--------	--------	--------	--------	--------	$6,000	Pending.
--------	--------	--------	--------	--------	--------	--------	1,000	Withdrawn by applicant.
--------	--------	--------	--------	--------	--------	--------	150	Pending.
--------	--------	--------	--------	--------	--------	--------	1,200	Permit issued.
--------	--------	--------	--------	--------	--------	--------	--------	Withdrawn by applicant.
--------	--------	--------	--------	--------	--------	--------	--------	Withdrawn by applicant.
--------	--------	--------	--------	--------	--------	--------	2,000	Permit issued.
--------	--------	--------	--------	--------	--------	--------	500	Permit issued.
--------	--------	--------	--------	--------	--------	--------	12,000	Pending.
--------	--------	--------	--------	--------	--------	--------	100	Permit issued.
--------	--------	--------	--------	--------	--------	--------	100	Pending.
--------	--------	--------	--------	--------	--------	--------	1,200	Pending.
1	--------	--------	--------	--------	--------	--------	--------	Withdrawn by applicant.
--------	--------	--------	--------	--------	--------	2	500	Rejected.
--------	--------	--------	--------	65	26,770	4,695	1,500,000	Pending.
--------	--------	--------	--------	23	10,910	8,554	580,000	Pending.
--------	--------	1	Milling	--------	--------	--------	2,000	Withdrawn by applicant.
--------	--------	--------	--------	--------	--------	--------	300	Permit issued.
--------	--------	--------	--------	--------	--------	--------	2,500	Permit issued.
--------	--------	0.25	Milling	--------	--------	--------	500	Withdrawn by applicant.
--------	--------	--------	--------	--------	--------	--------	2,500	Withdrawn by applicant.
--------	--------	--------	--------	--------	--------	--------	200	Rejected.
--------	--------	--------	--------	--------	--------	--------	200	Rejected.
--------	--------	--------	--------	--------	--------	--------	100	Rejected.
--------	--------	0.1	Milling	--------	--------	--------	750	Permit issued.
--------	--------	--------	--------	--------	--------	--------	25	Pending.
--------	--------	--------	--------	--------	--------	--------	750	Permit issued.
--------	--------	0.35	Potash Borax Soda	--------	--------	1	8,000	Pending.
--------	--------	--------	--------	--------	--------	--------	500	Permit issued.
--------	--------	--------	--------	--------	--------	--------	500	Pending.
--------	--------	--------	--------	--------	--------	--------	500	Pending.
10	600,000	--------	--------	--------	--------	--------	--------	Pending.
--------	--------	--------	--------	--------	--------	--------	175	Pending.
--------	--------	--------	--------	--------	--------	--------	200	Pending.
--------	--------	--------	--------	--------	--------	--------	275	Pending.
--------	--------	1	Milling	--------	--------	--------	2,000	Pending.
--------	--------	0.025	Milling	--------	--------	--------	5,000	Pending.
--------	--------	0.5	Milling	--------	--------	--------	1,500	Pending.

KERN

Application No.	Permit No.	Applicant	Source	Agricultural	
				Second feet	Acres
55	63	W. J. Newenham	Red Rock Canyon	2.5	200
69	------	Tulare Water Co.	Kern River	2,000	78,770
101	26	Arthur E. Barr	Unnamed springs	1	80
105	45	W. S. Russel	Plato Stream	2	160
134	48	A. F. Mansfield	Unnamed springs	1	325
179	------	Ramina Corporation	Unnamed stream	2	960
204	------	J. B. Brite	Brite Creek	2.5	320
215	75	C. H. Heldman	Iron Spring	0.025	440
226	85	Oscar Glanville et al.	Cottonwood Creek	4.7	375
239	------	Oak Creek Land and Water Co.	Oak Creek watershed	70	8,320
250	119	John Ripley	Canebrake Creek	1.25	100
266	133	Chris. L. Wirth	Unnamed stream	1.25	100
274	97	F. G. Dilthey	North Fk. Kern River	0.75	60
276	------	Mojave Mutual Land & Water Co.	Oak Creek watershed	70	61,440
309	150	G. F. Dair	Unnamed stream	1.4	140
317	------	Barclay McCowan	Kern River	10,000	---------
328	156	G. W. Gates and J. W. Chastian	Dry wash from Tehachapi	3	460
345	149	J. F. Lingo	Bitter Creek	0.625	40
350	------	Barclay McCowan	Kern River	25,000	---------
358	179	Richard Clayton	Erskine Creek	0.75	60
372	143	E. Heussard and J. Bosshard	Cottonwood Creek	0.75	25
377	------	S. L. Miller	Barrel Springs	2	760
386	------	Barclay McCowan	Caliente Creek	500	---------
387	------	Barclay McCowan	Walker Basin	100	---------
409	------	Loren H. Sterling	Dixie Wash	20	155

KINGS

324	------	Guaranty Land and Invest. Co.	Cross Creek	100	3,880
353	------	A. D. Schindler	South Fk. Kings River	2,000	250,000
354	------	A. D. Schindler	Kern River	2,000	250,000
355	------	A. D. Schindler	Tule and Kaweah rivers	1,000	250,000
413	------	Robert Cords, Jr.	Avenal Creek	20	640
505	------	Kings County Land & Cattle Co.	------------------------------	24	480

LAKE

26	4	W. H. Hill	Alder Creek	0.12	40
164	------	Sydney Dale	Unnamed spring	0.04	40
342	------	Mary E. Jewell	Gallagher Creek	0.37	15
391	------	Britton & Goldaracena	Gallagher Creek	0.19	60
407	------	R. J. R. Aden	Putah Creek	5.5	615

LASSEN

7	------	R. S. Nickerson and E. S. Pickard	Willow Creek	6	320
25	------	W. H. Earle et al.	Long Valley Creek	138	50,000
65	------	H. C. Jack	Willow Creek	4	140
66	------	Colonel W. Pogue	Silver Creek	5	180
72	------	W. H. Paulk	Ash Creek	10	220
73	------	Paul J. Hopper	Ash Creek	4	100
79	------	Andrew Babcock	Ash Creek	12	440
80	------	Alfred Babcock	Ash Creek	5	160
81	------	Earnest Babcock	Ash Creek	5	160
85b	------	Southern Lassen Irrigation Dist.	Long Valley Creek	300	22,565
103	------	Milton Babcock	Ash Creek	4	125
158	------	Kasper Weigand	Willow Creek	2	60
171	------	Herman T. Vockel	Seepage water	2	320
176	51	Z. Johnson	Unnamed stream	2	860
182	80	W. A. Brubeck	Gillman Stream	2	160
188	------	A. Anderson	Red Rock Creek	6	160

Municipal		Mining		Power		Storage, acre feet	Estimated cost	Status
Second feet	Population	Second feet	Character	Second feet	Theoretical h.p.			
COUNTY.								
--------	--------	--------	--------	--------	--------	--------	$8,000	Permit issued.
--------	--------	--------	--------	--------	--------	--------	200,000	Pending.
--------	--------	--------	--------	--------	--------	--------	25	Permit issued.
--------	--------	--------	--------	--------	--------	--------	200	Permit issued.
--------	--------	--------	--------	--------	--------	--------	1,000	Permit issued.
--------	--------	--------	--------	--------	--------	15	2,000	Pending.
--------	--------	--------	--------	--------	--------	10	1,000	Pending.
--------	--------	--------	--------	--------	--------	--------	500	Permit issued.
--------	--------	--------	--------	--------	--------	58	17,500	Permit issued.
--------	--------	--------	--------	--------	--------	6,000	500,000	Pending.
--------	--------	--------	--------	--------	--------	--------	250	Permit issued.
--------	--------	--------	--------	--------	--------	--------	250	Permit issued.
--------	--------	--------	--------	--------	--------	--------	500	Permit issued.
--------	--------	--------	--------	--------	--------	50,000	400,000	Rejected.
--------	--------	--------	--------	--------	--------	2	450	Permit issued.
--------	--------	--------	--------	--------	--------	250,000	------------	Pending.
--------	--------	--------	--------	--------	--------	2	2,500	Permit issued.
--------	--------	--------	--------	--------	--------	--------	20	Permit issued.
--------	--------	--------	--------	--------	--------	750,000	------------	Pending.
--------	--------	--------	--------	--------	--------	--------	150	Permit issued.
--------	--------	--------	--------	--------	--------	--------	300	Permit issued.
--------	--------	--------	--------	--------	--------	2	4,500	Pending.
--------	--------	--------	--------	--------	--------	--------	------------	Pending.
--------	--------	--------	--------	--------	--------	--------	------------	Pending.
--------	--------	--------	--------	--------	--------	--------	300	Pending.
COUNTY.								
--------	--------	--------	--------	--------	--------	--------	$16,500	Pending.
--------	--------	--------	--------	--------	--------	300,000	------------	Pending.*
--------	--------	--------	--------	--------	--------	300,000	------------	Pending.*
--------	--------	--------	--------	--------	--------	300,000	------------	Pending.*
--------	--------	--------	--------	--------	--------	--------	1,250	Pending.
--------	--------	--------	--------	--------	--------	--------	------------	Pending.
COUNTY.								
--------	--------	--------	--------	--------	--------	--------	$1,000	Permit issued.
--------	--------	--------	--------	--------	--------	--------	300	Withdrawn by applicant.
--------	--------	--------	--------	--------	--------	--------	250	Pending.
--------	--------	--------	--------	--------	--------	--------	600	Pending.
--------	--------	--------	--------	--------	--------	--------	4,000	Pending.
COUNTY.								
--------	--------	--------	--------	--------	--------	--------	$500	Pending.
--------	--------	--------	--------	--------	--------	100,000	1,000,000	Rejected.
--------	--------	--------	--------	--------	--------	--------	1,000	Pending.
--------	--------	--------	--------	--------	--------	80	550	Pending.
--------	--------	--------	--------	--------	--------	--------	500	Pending.
--------	--------	--------	--------	--------	--------	--------	500	Pending.
--------	--------	--------	--------	--------	--------	--------	500	Pending.
--------	--------	--------	--------	--------	--------	--------	500	Pending.
--------	--------	--------	--------	--------	--------	--------	500	Pending.
--------	--------	--------	--------	--------	--------	100,000	400,000	Pending.
--------	--------	--------	--------	--------	--------	--------	500	Pending.
--------	--------	--------	--------	--------	--------	--------	500	Pending.
--------	--------	--------	--------	--------	--------	--------	550	Rejected.
--------	--------	--------	--------	--------	--------	1,427	2,500	Permit issued.
--------	--------	--------	--------	--------	--------	--------	150	Permit issued.
--------	--------	--------	--------	--------	--------	80	1,500	Pending.

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*Proposed Tulare Lake Water District.

LASSEN COUNTY

Application No.	Permit No.	Applicant	Source	Agricultural	
				Second feet	Acres
195	195	Mary J. Abbott	Mud Spg. Cr. and Love Cr.	3	240
202	------	M. Garnier and F. Osborn	Long Valley Creek	25	245
203	------	Leon Bly	Eagle Lake	42	19,240
268	------	John F. Mauck	Honey Lake	166	----------
269	------	W. L. Wales	Willow Creek	500	50,000
280	------	W. L. Wales	Susan River	500	50,000
281	------	W. L. Wales	Eagle Lake	500	50,000
293	------	W. L. Wales	Skeedaddle Creek	500	50,000
426	------	W. L. Wales	Butte Creek	200	40,000
427	------	W L. Wales	Horse Lake	200	40,000
292	------	Leon Bly	Balls Canyon Creek and Willow Creek	500	----------
302	------	Leon Bly	Susan River	20	----------
401	------	Wm. H. Earle	Long Valley Creek	550	34,345
439	------	Nora Dorton	Wall Canyon Creek	0.5	48

LOS ANGELES

Application No.	Permit No.	Applicant	Source	Second feet	Acres
12	------	Birch Oil Co.	Canada del Rodeo	0.875	----------
16	30	P. M. Young	Kerr and Icy Springs	0.25	160
30	------	Little Baldy Water Co.	Deadman's Canyon	125	2,280
38	------	C. R. Bandle	Big Rock Creek	----------	----------
49	------	Bertha E. Fitch	Unnamed spring	0.025	----------
53	3	W. F. Pipher	Unnamed spring	1	24
57	------	J. H. Rylands	Cold Spring Canyon	1	5
68	------	G. E. McCoy	Santa Clara River	5	110
70	140	D. M. Furnivall	Santa Clara River	0.5	40
84	------	Cabazon Water Co.	Millard Canyon	25	2,800
90	------	Mrs. H. C. Gill	W. Fork, Saucer & Millard Creeks	5	320
95	------	F. G. Brooks	Big Tejunga River	625	----------
97	------	W. F. Erwin	Unnamed spring	0.25	20
98	64	Georges Fusenot	Ward and Oak canyons	0.15	40
106	------	Nelly B. Markell	Unnamed springs	0.25	----------
108	116	Citrus Improvement Co.	Ham Canyon	0.25	80
113	28	D. P. Flory	Keagle Canyon Extension	0.50	280
128	------	Daniel Curtis	Durant Springs	0.05	146
129	33	Renner E. Erwin	Unnamed springs	0.875	70
130	25	G. W. Haight	Canada De Los Aliso	1.25	150
163	52	B. C. Kingsbury	Unnamed springs	0.01	40
178	------	Llano Del Rio Co.	Big Rock Creek	3,000	4,710
180	53	R. P. Dalton	Unnamed springs	0.075	10
192	83	Edwin Bemis	Unnamed springs	0.5	40
227	------	W. M. Putnam	Unnamed spring	1	135
267	126	F. W. Gross	Unnamed spring	0.03	10
272	88	L. F. Elser	Unnamed spring	0.05	160
273	96	Titto Bros.	Unnamed spring	0.08	15
283	------	M. L. Hazzard	San Dimas & Cow canyons	2,250	----------
291	135	H. L. Heffner	Unnamed spring	0.05	2
298	------	H. A. Unruh	Big Santa Anita Stream	5	200
303	130	W. L. Hagenbaugh	Boulder Creek	3	240
308	129	D. Southwell	Coyote Springs	0.01	20
310	------	H. C. Dunn	Pallet Creek	1	100
314	------	Louis Luckel	Marengo Storm Drain	0.01	----------
319	------	Carter Investment Co.	Flowing well	2.5	285
336	------	C. F. Earle	Unnamed spg. and stream	0.625	75
352	134	J. A. Brown	Unnamed spring	0.01	80
369	162	George Stewart	Underground stream	----------	----------
382	146	W. C. Longstreth	Canyon Spring	0.33	25
384	------	California Highway Commission	Salt Creek	0.25	----------
398	------	Llano Del Rio Co.	Big Rock Creek	3,000	4,710
422	127	Louis Luckel	Marengo Storm Drain	0.04	----------

—Continued.

Municipal		Mining		Power		Storage, acre feet	Estimated cost	Status
Second feet	Population	Second feet	Character	Second feet	Theoretical h.p.			
							300	Permit issued.
							3,000	Pending.
							300,000	Pending.
							600,000	Withdrawn by applicant.
								Pending.*
								Pending.*
								Pending.*
								Pending.*
								Pending.*
								Pending.*
						50,000		Pending.*
							†	Pending.
						135,000	1,000,000	Pending.
							100	Pending.

COUNTY.

Municipal		Mining		Power		Storage, acre feet	Estimated cost	Status
Second feet	Population	Second feet	Character	Second feet	Theoretical h.p.			
							$500	Pending.
							1,000	Permit issued.
							10,000	Pending.
								Withdrawn by applicant.
								Withdrawn by applicant.
						1	250	Permit issued.
							1,200	Pending.
							200	Rejected.
							75	Permit issued.
						80	25,000	Pending.
						1	500	Pending.
								Rejected.
								Permit issued.
							4,000	Permit and license issued.
								Rejected.
						1	1,500	Permit issued.
							2,000	Permit issued.
							600	Withdrawn by applicant.
							500	Permit issued.
						12	5,000	Permit issued.
								Permit issued.
						7,500		Rejected.
							600	Permit issued.
							500	Permit issued.
							3,200	Pending.
						1	250	Permit issued.
							400	Permit issued.
							500	Permit issued.
						15,000	350,000	Pending.
							250	Permit issued.
						275	30,000	Rejected.
						4	500	Permit issued.
							150	Permit issued.
							1,000	Pending.
							100	Superseded by Ap. 422.
						1	5,000	Rejected.
							1,050	Pending.
							250	Permit issued.
		0.025	Placer				300	Permit issued.
							1,000	Permit issued.
						2	30,000	Pending.
						7,500	130,000	Pending.
							150	Permit issued.

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*Honey Lake Valley Irrigation District.
†Included in No. 203.

LOS ANGELES

Application No.	Permit No.	Applicant	Source	Agricultural	
				Second feet	Acres
425		City of Arcadia	Big Santa Anita and Clamshell creeks		
430		L. E. Winsor	Unnamed canyon	1.25	100
446		C. H. and Carrie B. Cobb	Los Flores Canyon stream	1.10	18
447		C. H. and Carrie B. Cobb	Los Flores Canyon stream		
460		P. Siemens and S. Kuenzel	Unnamed spg. and stream	2	120
463		A. F. George	Unnamed spring	0.625	
464		A. J. Krystosiak	Unnamed springs	2	120
473	197	Mary A. F. Geft	Spring in dry arroyo	0.33	40
474		Harry Heath	Mountain spring	0.002	33
492		F. H. Mogle and G. Mox	Unnamed canyons	1	40
518		G. Blum et al.	Aliso and Gleason canyons	1.25	100

MADERA

207		White and Friant Lumber Co.	Whiskey Creek		
257		White and Friant Lumber Co.	Sand Creek		
234		Madera Irrigation District	San Joaquin R., Fresno R., Chowchilla R., Sand Cr., Cottonwood Cr., Hildreth Cr., Dry Cr., and Mariposa Cr.	5,000	400,000
510		Mrs. Emmy Lorke	Whiskey Creek	1	

MARIN

216	147	N. L. Fitzhenry	Mineral Springs	0.1	

MARIPOSA

33		E. Sasser	Unnamed springs	0.01	
471		F. M. Ish			

MENDOCINO

46	6	O. Cooper	Eden Creek	1.5	40
99	27	E. R. Caldwell	Wilson Creek	0.07	5
124		W. G. Henshaw	Eden Creek	3	60
168	56	N. W. P. Railroad	Poonkinney Creek	0.15	
396	192	A. Sbragia	Rouse Creek	0.02	30
431	175	C. A. Thayer	Haehl Creek	0.14	160

MERCED

		None			

MODOC

44		J. R. Leonard	12-Mile Cr. and Cowhead L.	1,140	50,000
63		J. D. O'Connell	Little Juniper Gulch		140
118	40	M. J. Whitney	"Hole in the Rock" Canyon		105
135	69	G. M. Kelley	Portuguese Flat		630
139	103	E. M. Mason	Clear Lake Hills		30
154	44	F. H. Roberts	Unnamed runoff		175
161	39	James McBrien	Unnamed runoff		98
173	66	J. M. Rogers and A. C. Lester	Unnamed ravine		287
194	59	J. Poindexter and J. L. Davis	Unnamed ravine		130
201		A. G. Clausen	Rattlesnake Creek		20,000

COUNTY—Continued.

Municipal		Mining		Power		Storage, acre feet	Estimated cost	Status
Second feet	Population	Second feet	Character	Second feet	Theoretical h.p.			
7	1,200					6	25,000	Pending.
							1,000	Pending.
						5	5,000	Pending.
		1.1						Pending.
							1,500	Pending.
							250	Pending.
							200	Pending.
							500	Permit issued.
							250	Pending.
							3,000	Pending.
							500	Pending.

COUNTY.

		25	Lumbering				$200,000	Pending.
		25	Lumbering			3,060		Pending.
							380,000	Pending.
								Pending.

COUNTY.

							$4,000	Permit issued.

COUNTY.

								Withdrawn by applicant.
				100	18,180		$1,500,000	Pending.

COUNTY.

							$750	Permit issued.
							200	Permit issued.
							2,100	Pending.
							3,000	Permit issued.
							75	Permit issued.
						100	500	Permit issued.

COUNTY.

COUNTY.

						122,480	$425,000	Rejected.
						600	5,000	Pending.
						552	550	Permit issued.
						1,428	5,750	Permit issued.
						15	650	Permit issued.
						953	1,800	Permit issued.
						104	6,000	Permit issued.
						1,267	8,500	Permit issued.
						120	200	Permit issued.
						50,000		Rejected.

MODOC COUNTY

Application No.	Permit No.	Applicant	Source	Agricultural	
				Second feet	Acres
246	86	H. P. Wood	Goose L. Corrals Canyon	----------	580
264	110	G. T. Neasham and E. L. Kafader	Lieberman Creek	3	300
290	152	O. H. Perry	Rye Patch Canyon	1.875	150
296	100	Boyd Petersen	Unnamed stream	1.80	144
312	113	J. H. and Laura B. Meredith	Bonner Ravine	----------	115
318	155	W. Birch	Unnamed stream	----------	20
327	123	E. Swanson	E. Fork Rattlesnake Creek	----------	155
338	137	W. J. and P. S. Dorris	Government Corrals Flat	----------	400
375	151	J. W. Fitzhugh	Canyon Creek	----------	120
421	------	Mary E. Ivory	Antelope Plains	----------	675
440	------	J. H. Ake	Unnamed watershed	----------	80
441	------	E. Ivory, Jr.	Ryegrass Swale	----------	663
443	------	D. M. Eckard and P. B. McBride	Poker Flat Canyon	----------	110
475	------	A. G. Claussen	Portuguese Flat and Canyon Creek	----------	127
486	202	A. P. White	Ralston Creek Flood Area	----------	190
491	------	East Side Land and Water Co.	12-Mile Cr. and Cowhead L.	625	25,185
496	------	Frank K. Mott	Ash Creek	----------	50,000
508	------	J. B. Clover	Parsnip Cr. & S. Fork of Pit River	----------	40,000
521	------	G. H. Ayres	Cowhead L. & 12-Mile Cr.	700	40,000

MONO

Application No.	Permit No.	Applicant	Source	Second feet	Acres
42	------	W. D. Roberts	Cain Creek	1	160
51	81	Pacific Power Corporation	Leevining Creek	----------	----------
52	13	Pacific Power Corporation	Rush Creek	----------	----------
60	------	G. A. Clarke	Fall and Rock Canyon Crs.	3	480
62	------	J. L. Giroux and F. R. Smith	Piute Creek	----------	----------
94	------	H. M. Hall	Rock and Fall creeks	3.75	960
133	------	J. B. Dugan	Unnamed spring	3	----------
143	------	City of Los Angeles	Leevining Creek	----------	----------
144	------	City of Los Angeles	Rush Creek	----------	----------
153	------	G. A. Clarke	Pellisier, Hogue and Cinnamon creeks	4	480
174	65	A. S. Hinkley and W. H. Hawken	Wilson Creek	----------	----------
247	73	Mildred M. Gregory	West Gregory Creek	0.125	10
278	114	Frank Shaw Land and Cattle Co.	Dexter Creek	----------	1,680
335	------	S. M. Merideth and Regina Pierce	Dog Creek	3	160
340	125	Lillie J. Smith	Unnamed spring	1.5	160
343	------	Flory, Culp & Flory	Black Canyon	3	355
346	------	E. H. Dodge	Leevining Creek	500	50,000
356	183	W. W. Cunningham	Slinkard Creek	4	320
363	------	D. S. Jones	Robinson Creek	3	----------
399	196	Annie G. Crosby	Piute Creek	2	160
418	------	George Dorn	Cow Track Spring	0.05	----------
442	------	Mono Canal Co.	Rush and Leevining creeks	750	50,000
498	------	J. L. Giroux	MacAfee Creek	12.5	440

MONTEREY

Application No.	Permit No.	Applicant	Source	Second feet	Acres
110	24	William Grey	Unnamed spring	----------	----------

NAPA

Application No.	Permit No.	Applicant	Source	Second feet	Acres
253	------	B. A. and A. A. Wilson and F. D. Frey	James Creek	----------	----------
253a	------	B. A. and A. A. Wilson and F. D. Frey	James Creek	----------	----------
331	------	Albert Hawkins	Deer Lick Springs	0.05	5
519	------	Dixon Irrigation District	Putah Creek	----------	55,000

—Continued.

Municipal		Mining		Power		Storage, acre feet	Estimated cost	Status
Second feet	Population	Second feet	Character	Second feet	Theoretical h.p.			
--------	--------	--------	--------	--------	--------	1,500	500	Permit issued.
--------	--------	--------	--------	--------	--------	350	1,200	Permit issued.
--------	--------	--------	--------	--------	--------	--------	75	Permit issued.
--------	--------	--------	--------	--------	--------	--------	400	Permit issued.
--------	--------	--------	--------	--------	--------	12	1,000	Permit issued.
--------	--------	--------	--------	--------	--------	30	500	Permit issued.
--------	--------	--------	--------	--------	--------	180	600	Permit issued.
--------	--------	--------	--------	--------	--------	550	1,100	Permit issued.
--------	--------	--------	--------	--------	--------	65	900	Permit issued.
--------	--------	--------	--------	--------	--------	1,550	2,400	Pending.
--------	--------	--------	--------	--------	--------	69	500	Pending.
--------	--------	--------	--------	--------	--------	893	2,200	Pending.
--------	--------	--------	--------	--------	--------	175	2,000	Pending.
--------	--------	--------	--------	--------	--------	280	1,000	Pending.
--------	--------	--------	--------	--------	--------	146	500	Permit issued.
--------	--------	--------	--------	--------	--------	117,585	--------	Pending.
--------	--------	--------	--------	--------	--------	100,000	275,000	Pending.
--------	--------	--------	--------	--------	--------	80,000	250,000	Pending.
--------	--------	--------	--------	--------	--------	--------	450,000	Pending.

COUNTY.

--------	--------	--------	--------	--------	--------	--------	$300	Pending.
--------	--------	--------	--------	40	8,800	--------	717,140	Permit issued.
--------	--------	--------	--------	40	7,030	--------	788,520	Permit issued.
--------	--------	--------	--------	--------	--------	--------	10,000	Pending.
--------	--------	3	Milling	--------	--------	--------	10,000	Withdrawn by applicants.
--------	--------	--------	--------	--------	--------	--------	1,000	Pending.
--------	--------	--------	--------	--------	--------	--------	--------	Rejected.
--------	--------	--------	--------	40	9,400	5,920	930,000	Pending.
--------	--------	--------	--------	45	8,621	18,890	960,000	Pending.
--------	--------	--------	--------	--------	--------	--------	10,000	Pending.
--------	--------	--------	--------	2	100	--------	2,500	Permit issued.
--------	--------	--------	--------	--------	--------	--------	40	Permit issued.
--------	--------	--------	--------	--------	--------	1,110	6,500	Permit issued.
--------	--------	--------	--------	--------	--------	--------	200	Pending.
--------	--------	--------	--------	--------	--------	--------	450	Permit issued.
--------	--------	--------	--------	--------	--------	--------	200	Pending.
--------	--------	--------	--------	--------	--------	--------	200,000	Pending.
--------	--------	--------	--------	--------	--------	--------	1,000	Permit issued.
--------	--------	--------	--------	--------	--------	--------	--------	Withdrawn by applicant.
--------	--------	--------	--------	--------	--------	--------	300	Permit issued.
--------	--------	--------	--------	--------	--------	--------	250	Pending.
--------	--------	--------	--------	--------	--------	--------	500,000	Pending.
--------	--------	--------	--------	--------	--------	--------	6,500	Pending.

COUNTY.

--------	--------	0.03	Milling	--------	--------	--------	$100	Permit issued.

COUNTY.

--------	--------	12.5	Milling	--------	--------	--------	$500	Pending.
--------	--------	--------	--------	0.875	10	--------	--------	Pending.
--------	--------	--------	--------	--------	--------	--------	--------	Withdrawn by applicant.
--------	--------	--------	--------	--------	--------	325,000	--------	Pending.

NEVADA

Application No.	Permit No.	Applicant	Source	Agricultural	
				Second feet	Acres
67		L. Gilmore et al	Little Green Horn Canyon	125	
181		N. M. Melrose	Diamond Creek		
181a		N. M. Melrose	Canyon Creek		
344	171	J. F. Dunn	South Wolf Creek	0.725	58
374		F. Robins	Big Shady Creek	6.25	80
478		H. O. Kohler and A. Schwartz	Scotchman's Creek	2	10

ORANGE

Application No.	Permit No.	Applicant	Source	Agricultural	
				Second feet	Acres
122		Mrs. N. J. Davis	Mountain spring		
306	108	The Irvine Co.		0.075	

PLACER

Application No.	Permit No.	Applicant	Source	Agricultural	
				Second feet	Acres
172		Lake Tahoe R. R. and Trans. Co.	Ward Creek		
225		California Chief Development Co.	Owl Creek		
277		California Chief Development Co.	Owl Creek and Gray Eagle tunnel		
294	132	C. E. Jarvis and A. Gonzales	Lady Canyon		
307		R. Colwell	Buck Lake	2.5	100
414	187	Mrs. S. W. Taylor	Unnamed stream	0.1	8
497		A. Rasmussen	Coon Creek	1	40
524		J. B. Francis	Dutch Ravine	0.25	40

PLUMAS

Application No.	Permit No.	Applicant	Source	Agricultural	
				Second feet	Acres
85a		Southern Lassen Irrigation Dist.	Last Chance Creek	150	22,565
86	5	Engels Copper Mining Co.	Morton Creek		
89	46	J. F. Cowan	Dollie Gulch Creek		
137		L. R. Stokes	Spring		
235	160	Spanish Peak Lumber Co.	Mill Creek	1.5	120
254		W. L. Shaffer	N. Fork Feather River		
326		E. S. Wells	Peters Creek		
373	173	Walker Mining Co.	Ward and Nye Creeks		
397		L. G. Sinnard and C. E. Van Barneveld	State Crk. and tributaries		
449		Albert Reed	Spring in Soda Ravine	0.1	2
482		H. P. Cox	Spring branch Taylor Crk.	0.25	

RIVERSIDE

Application No.	Permit No.	Applicant	Source	Agricultural	
				Second feet	Acres
11	8	Laura Goodendorf	Unnamed spring	0.01	
45		C. M. Collins	Cottonwood Creek		160
54		W. S. White	Cherry Creek	0.625	320
74		W. J. Hole and E. L. Veuve	Santa Ana River	17	5,830
82	11	L. Pilaria	Mission Creek	2	160
91	41	S. D. Allen	Whitewater River	2	160
111	23	C. Passil	Chino Canyon	1.75	140
170	82	W. J. Hole	Run-off from streets of city of Riverside		4,272
177	54	J. Hornback	Two sprgs. in Oak Canyon	0.1	8
189		Paul Bresee	Colorado River	1,110	177,550
223	76	Alberhill Coal and Clay Co.	Sycamore Springs	0.5	150
365		C. R. Smith	Lagoon	25	3,040
376		Cal. Farm and Irrigation Co.	Colorado River	375	59,130
423		F. P. Nelson	Arm of Laguna	3	80
499		W. B. Baker and F. H. Merril	Whitewater R., Mission Cr., Big, Little and Dry Morongo Crs., Snow Cr.		
511		Emma B. Driver and H. W. Louis	Deep Canyon	2.5	320
515		Marcus Pluth	Snow Cr. and tributaries		
516		Marcus Pluth	Whitewater R. and trib.		

COUNTY.

Municipal		Mining		Power		Storage, acre feet	Estimated cost	Status
Second feet	Population	Second feet	Character	Second feet	Theoretical h.p.			
								Rejected.
		6.25	Placer				$8,500	Pending.
		12.5	Placer					Rejected.
							500	Permit issued.
							550	Pending.
							4,725	Permit and license issued

COUNTY.

								Withdrawn by applicant.
							$2,500	Permit issued.

COUNTY.

				2.5	60			Withdrawn by applicant.
		2	Placer				$200	Pending.
				5	568		20,000	Pending.
		3	Placer					Permit issued.
						12	400	Pending.
							15	Permit issued.
							2,000	Pending.
							500	Pending.

COUNTY.

						19,250	$200,000	Pending.
				10				Permit and license issued.
		2	Milling				1,000	Permit issued.
		0.2	Placer				500	Pending.
							2,000	Permit issued.
				530	4,800		45,000	Pending.
				1.25	10		400	Pending.
				20	1,170		25,000	Permit issued.
		100	Hydraulic					Pending.
							375	Pending.
							1,300	Pending.

COUNTY.

								Permit issued.
								Withdrawn by applicant.
								Rejected.
							$181,500	Pending.
								Permit issued.
							1,000	Permit issued.
							2,500	Permit issued.
						1,000	10,000	Permit issued.
						1	150	Permit issued.
							8,877,500	Pending.
							2,500	Permit issued.
						1	25,000	Rejected.
						27	2,300,000	Pending.
							500	Pending.
						240,000		Pending.
							2,000	Pending.
				12	2,740		215,000	Pending.
				40	8,250		606,515	Pending.

SACRAMENTO

Application No.	Permit No.	Applicant	Source	Agricultural	
				Second feet	Acres
61	------	O. F. Severson	American River	100	15,000
138	67	A. Givan	American River	15	3,100
458	------	Landis Brothers Co.	Dry Creek	------	100,000

SAN BENITO

------	------	None	------	------	------

SAN BERNARDINO

13	------	J. G. Van Zandt	N. tributaries of Mill Cr.	------	------
56	18	Morongo Valley Mutual Water Co.	Big Morongo Creek	2.5	520
71	7	S. B. Wright and R. Sharpless	Smithson Springs	0.03	80
88	38	S. W. Gandrean	Four unnamed springs	0.35	29
107	------	J. E. Bishop	Arrastre Creek	2.5	160
119	------	E. H. Craft	Unnamed springs	1	160
120	22	E. H. Craft	Br. of Arrastre Creek	2	160
121	------	Afton Water, Land and Power Co.	Mojave River	150	40,000
126	50	J. M. Bradford	Unnamed spring	0.025	------
149	47	G. O. Berry	Vincent Springs	1	160
157	------	G. W. Layman	Springs in Arctic Canyon	1	320
162	57	O. S. McKinney	Upper Little Morongo Cr.	3	320
167	------	Peter Siemens	Unnamed spring	0.5	160
183	168	A. Bila and C. C. Caley	Arctic Canyon	------	------
187	------	Horse Spring Water Co.	Wild Horse Spring	3	240
193	161	W. H. and J. S. Garrison	Crystal Creek	1.25	200
218	------	H. D. Lanfair	Dry wash	------	------
240	107	J. Chambers	Horse Spring Gulch	------	------
251	89	Mrs. Phebe J. Henshaw	Davis Springs	2	160
260	------	O. C. Johnson et al	Stone House Spring	1	------
270	90	City of Los Angeles	Unnamed springs	0.01	1
271	91	City of Los Angeles	Seeley Creek	0.04	2
284	------	Rock Springs Land and Cattle Co.	Black Diamond Wells	0.05	------
285	------	O. C. Johnson et al	Leach's Spring	0.25	------
288	------	O. C. Johnson et al	Quail Spring	0.25	------
304	154	H. F. Danks	Willow Spring	0.25	40
315	------	H. A. Cole	Antelope Creek	------	------
320	------	G. C. Howard & Anna L. Mueller	Unnamed springs	0.12	60
329	------	Ralph Hobbs	Piute Spring	0.25	------
337	144	Ivanpah Valley Imp. Co.	Cliff and Boulder canyons	2	8,000
359	------	W. S. Anderson	Unnamed spring	------	------
364	------	F. M. Carter	Upper Swarthout Canyon and Sheep Creek	6	15,360
366	------	J. H. Dixon	Horse Canyon underflow	3	120
383	------	Mamie Johnson	Unnamed springs and crk.	2	160
404	159	Rock Springs Land & Cattle Co.	Colton Wells	0.05	------
415	------	Oak Spring Water Co.	Oak Spring	3	200
417	184	Sara Brodek	Unnamed canyon	0.7	240
435	------	Rock Springs Land & Cattle Co.	Clark Spring	0.05	------
436	------	Rock Springs Land & Cattle Co.	Mormon Spring	0.05	------
437	------	Rock Springs Land & Cattle Co.	Red Rock Spring	0.05	------
438	------	W. M. Hunt, Jr.	Deep Creek and West Fork Mojave River	300	50,000
456	------	S. T. Black	West Fork Mojave River	3	60
459	176	J. R. Haas	Unnamed springs	1	60
461	------	C. N. Hewitt	Saw Pit Canyon	2	50
466	------	J. G. Van Zandt	N. tributaries of Mill Cr.	------	------
483	------	Rock Springs Land & Cattle Co.	Lone Tree Spring	0.05	------
484	------	Rock Springs Land & Cattle Co.	Talc. Spring	0.05	------
488	------	H. L. Whiston	South Fork of Horsethief Canyon	3	160
501	------	C. W. Fick	Two unnamed springs	0.12	------
509	------	W. B. Baker and F. H. Merril	Pipes Creek and Antelope Creek	------	------

COUNTY.

Municipal		Mining		Power		Storage, acre feet	Estimated cost	Status
Second feet	Population	Second feet	Character	Second feet	Theoretical h.p.			
--------	--------	--------	--------------	--------	--------	--------	------------	Rejected.
--------	--------	--------	--------------	--------	--------	--------	$52,250	Permit issued.
--------	--------	--------	--------------	--------	--------	100,000	1,000,000	Pending.

COUNTY.

Municipal		Mining		Power		Storage, acre feet	Estimated cost	Status
Second feet	Population	Second feet	Character	Second feet	Theoretical h.p.			
--------	--------	--------	--------------	--------	--------	--------	------------	------------------------

COUNTY.

Municipal		Mining		Power		Storage, acre feet	Estimated cost	Status
Second feet	Population	Second feet	Character	Second feet	Theoretical h.p.			
--------	--------	--------	--------------	25	1,000	--------	$500,000	Superseded by Appl. 466.
--------	--------	--------	--------------	--------	--------	--------	12,300	Permit issued.
--------	--------	--------	--------------	--------	--------	--------	1,200	Permit issued.
--------	--------	--------	--------------	--------	--------	--------	300	Permit issued.
--------	--------	--------	--------------	--------	--------	--------	------------	Rejected.
--------	--------	--------	--------------	--------	--------	--------	250	Withdrawn by applicant.
--------	--------	--------	--------------	--------	--------	--------	50	Permit issued.
--------	--------	--------	--------------	--------	--------	50,000	150,000	Rejected.
--------	--------	--------	--------------	--------	--------	--------	250	Permit issued.
--------	--------	--------	--------------	--------	--------	--------	1,500	Permit issued.
--------	--------	--------	--------------	--------	--------	--------	3,000	Withdrawn by applicant.
--------	--------	--------	--------------	--------	--------	--------	2,000	Permit issued.
--------	--------	--------	--------------	--------	--------	--------	500	Pending.
--------	--------	0.38	Milling	--------	--------	--------	500	Permit issued.
--------	--------	--------	--------------	--------	--------	--------	1,500	Pending.
--------	--------	--------	--------------	--------	--------	--------	2,000	Permit issued.
--------	--------	--------	--------------	--------	--------	--------	------------	Withdrawn by applicant.
--------	--------	0.25	Milling	--------	--------	--------	------------	Permit issued.
--------	--------	--------	--------------	--------	--------	--------	160	Permit issued.
--------	--------	--------	--------------	--------	--------	--------	250	Rejected.
--------	--------	--------	--------------	--------	--------	--------	25	Permit issued.
--------	--------	--------	--------------	--------	--------	--------	750	Permit issued.
--------	--------	--------	--------------	--------	--------	--------	500	Pending.
--------	--------	--------	--------------	--------	--------	--------	400	Rejected.
--------	--------	--------	--------------	--------	--------	--------	400	Rejected.
--------	--------	--------	--------------	--------	--------	--------	500	Permit issued.
--------	--------	1.5	Milling	--------	--------	--------	2,000	Rejected.
--------	--------	--------	--------------	--------	--------	--------	800	Withdrawn by applicants
--------	--------	--------	--------------	--------	--------	--------	------------	Rejected.
--------	--------	--------	--------------	--------	--------	3	10,000	Permit issued.
--------	--------	--------	--------------	--------	--------	--------	------------	Withdrawn by applicant.
--------	--------	--------	--------------	--------	--------	3,000	------------	Pending.
--------	--------	--------	--------------	--------	--------	--------	3,000	Pending.
--------	--------	--------	--------------	--------	--------	--------	200	Pending.
--------	--------	--------	--------------	--------	--------	--------	500	Permit issued.
--------	--------	--------	--------------	--------	--------	--------	5,000	Pending.
--------	--------	--------	--------------	--------	--------	--------	7,500	Permit issued.
--------	--------	--------	--------------	--------	--------	--------	1,000	Pending.
--------	--------	--------	--------------	--------	--------	--------	150	Pending.
--------	--------	--------	--------------	--------	--------	--------	150	Pending.
--------	--------	--------	--------------	--------	--------	100,000	------------	Pending.
--------	--------	--------	--------------	--------	--------	--------	1,500	Pending.
--------	--------	--------	--------------	--------	--------	--------	250	Permit issued.
--------	--------	--------	--------------	--------	--------	--------	450	Pending.
--------	--------	--------	--------------	25	6,330	--------	500,000	Pending.
--------	--------	--------	--------------	--------	--------	--------	150	Pending.
--------	--------	--------	--------------	--------	--------	--------	150	Pending.
--------	--------	--------	--------------	--------	--------	3	15,000	Pending.
--------	--------	--------	--------------	--------	--------	--------	200	Pending.
--------	--------	--------	--------------	--------	--------	--------	------------	Pending.

SAN DIEGO

Application No.	Permit No.	Applicant	Source	Agricultural	
				Second feet	Acres
4	------	J. M. Mack	Temecula Creek	25	4,000
8	------	La Mesa, Lemon Grove and Spring Valley Irrigation District	San Diego River	2,500	14,800
47	------	D. T. Bentley	Unnamed springs	7.5	640
50	------	J. A. Edmonds	S. branch San Felipe R.	----------	----------
75	------	F. K. Popham	Unnamed spring and canyon	----------	----------
96	------	J. A. McCain	Unnamed creek	2.5	----------
127	------	San Diego Eucalyptus Co.	Wells along Oak Run	0.5	----------
131	34	Minnie E. Faddis	Unnamed spring	0.12	10
136	------	J. P. Taggart	Banner and Chariot canyons	----------	10,000
140	35	G. W. McCain	Spring on Vallecito Creek	1.2	160
199	------	Fayette C. Lamb	Arkansas and Hunt canyons	10	----------
219	------	E. A. Crokat	Oriflamme Creek	3	160
238	------	La Mesa, Lemon Grove and Spring Valley Irrigation District	San Diego River	2,500	14,800
261	------	Claudie A. Strabley	Cariso Creek	3.75	96
263	------	Claudie A. Strabley	Cariso Creek	0.75	96
368	172	R. J. Ruddock	Unnamed spring	0.025	2
487	------	W. R. Rogers	Unnamed creek	0.15	30
490	------	E. Fletcher	Santa Maria Creek	20	1,320

SAN FRANCISCO

------	------	None	----------	----------	----------

SAN JOAQUIN

100	37	J. W. Squires and R. B. Gilmour	Little John Creek	1.8	140
301	------	West Side Irrigation District	Old River	225	11,380
379	167	New England-California Corp.	Stanislaus River	2.7	210

SAN LUIS OBISPO

231	------	Atascadero Mutual Water Co.	Salinas River	80	23,000
348	------	City of San Luis Obispo	Lopez Creek	----------	----------
349	------	City of San Luis Obispo	Salinas Creek	----------	----------

SAN MATEO

151	112	John Kyne	San Vincente	0.22	18

SANTA BARBARA

43	------	C. Lillingston	Gobernador Creek	5	1,160
212	------	Jesse Richardson	Unnamed spring	0.06	2
311	165	W. L. Jones	Bates Creek	0.5	40
330	124	A. L. Andrews	Kelsey Creek	1	80
370	------	Loalda Lands Co.	Zaca Creek	7.5	250

SANTA CLARA

146	------	A. Swickard	Coyote Creek	160	17,000
232	71	C. B. Cheney	Glenovia Creek	0.12	18
457	------	J. D. Guerraz	Unnamed stream	0.02	40

COUNTY.

Municipal		Mining		Power		Storage, acre feet	Estimated cost	Status
Second feet	Population	Second feet	Character	Second feet	Theoretical h.p.			
--------	--------	--------	--------	--------	--------	--------	--------	Rejected.
--------	--------	--------	--------	--------	--------	34,000	$1,232,500	Pending.
--------	--------	--------	--------	--------	--------	5	3,000	Rejected.
--------	--------	--------	--------	--------	--------	--------	--------	Withdrawn by applicant.
--------	--------	--------	--------	--------	--------	--------	--------	Withdrawn by applicant.
--------	--------	--------	--------	--------	--------	--------	--------	Withdrawn by applicant.
--------	--------	--------	--------	--------	--------	--------	--------	Rejected.
--------	--------	--------	--------	--------	--------	--------	100	Permit issued.
--------	--------	--------	--------	--------	--------	8,000	500,000	Rejected.
--------	--------	--------	--------	--------	--------	12,000	3,000	Permit issued.
--------	--------	--------	--------	--------	--------	--------	--------	Rejected.
--------	--------	--------	--------	--------	--------	--------	4,000	Pending.
--------	--------	--------	--------	--------	--------	34,000	1,232,500	Pending.
--------	--------	--------	--------	--------	--------	--------	1,200	Pending.
--------	--------	--------	--------	--------	--------	--------	800	Pending.
--------	--------	--------	--------	--------	--------	--------	500	Permit issued.
--------	--------	--------	--------	--------	--------	--------	400	Pending.
--------	--------	--------	--------	--------	--------	8,000	200,000	Pending.

COUNTY.

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COUNTY.

--------	--------	--------	--------	--------	--------	--------	$550	Permit issued.
--------	--------	--------	--------	--------	--------	--------	285,000	Pending.
--------	--------	--------	--------	--------	--------	8	1,200	Permit issued.

COUNTY.

--------	--------	--------	--------	--------	--------	60,000	$750,000	Pending.
5	--------	--------	--------	--------	--------	--------	--------	Pending.
8	--------	--------	--------	--------	--------	--------	--------	Pending.

COUNTY.

--------	--------	--------	--------	--------	--------	--------	$50	Permit issued.

COUNTY.

--------	--------	--------	--------	--------	--------	706	$66,800	Rejected.
--------	--------	--------	--------	--------	--------	--------	150	Pending.
--------	--------	--------	--------	--------	--------	--------	100	Permit issued.
--------	--------	--------	--------	--------	--------	50	1,000	Permit issued.
--------	--------	--------	--------	--------	--------	--------	--------	Rejected.

COUNTY.

--------	--------	--------	--------	--------	--------	40,000	--------	Rejected.
--------	--------	--------	--------	--------	--------	--------	$250	Permit issued.
--------	--------	--------	--------	--------	--------	--------	200	Pending.

SANTA CRUZ
SHASTA

Application No.	Permit No.	Applicant	Source	Agricultural	
				Second feet	Acres
15	1	D. T. Gerry	Shingle Creek	2.5	160
20	2	D. J. Stroup	North Fork Bear Creek	2.5	120
21	------	E. M. Elliot	Fall River	----------	----------
112	104	E. A. Schuler	Sheridan Creek	5	640
184	------	E. G. Hopson	Cow Creek	40	2,960
185	------	William Watson	Sheridan Creek	2.5	160
233	189	J. C. Rhoades	Clark Creek	0.6	50
237	------	T. M. O'Keefe	Cow Creek	25	1,440
245	190	Alonzo Haley	Clark Creek	0.52	40
295	120	H. E. Stroup	North Fork Bear Creek	0.31	25
325	------	J. W. Long, et al.	Mid. Fk. Cottonwood Cr.	----------	----------
351	------	A. K. Lane	Brock Creek	2.5	20
390	194	G. W. Rice	N. Fork N. Salt Creek	0.38	30
420	188	J. E. Carney	Hatchet Creek	2.5	200
434	------	F. M. Conrad	Goose Creek	17.5	110
453	------	E. E. Pollock	E. Fork Stillwater Creek	15	400

SIERRA

24	------	H. L. Berkey	Greenwood Creek	----------	----------
481	203	Twenty-one Mining Co.	Buckeye Ravine	----------	----------
495	------	T. P. Crowder	Little Truckee River	100	----------

SISKIYOU

9	------	I. S. Erbentraut	Big Spring Creek	75	1,050
58	------	Webb Bros. Co.	Shasta River	5	465
115	94	H. J. Barton	Beaver Creek	----------	----------
142	95	Thomas Quigley	Beaver Creek	----------	----------
156	62	J. J. Rinebold	East Fork Taylor Creek	----------	----------
169	55	John Silva	Scott River	2.25	330
252	------	F. W. Gooss	Hudson Creek	2.50	50
275	138	A. E. Keables	Barkhouse Creek	----------	----------
313	186	C. J. Laird	Lower Klamath Lake	5	150
385	166	J. T. Rogers	Rogers Creek	0.47	37
393	------	J. W. Chapman, et al.	Mule Creek	----------	----------
394	------	A. J. Barr	Cold Creek	1	80
395	193	C. F. Thomain and J. Teukert	New Diggings Creek	----------	----------
419	------	Webb Bros. Co.	Shasta River	12	1,200
433	------	Frank Gilloon	Overflow from McCloud River timber company's pipe line	0.62	40
445	------	B. Casalta	Overflow from McCloud River timber company's pipe line	1.1	154
448	------	Lucerne Water Co.	Shasta River	50	4,144
452	------	Martin S. Schuler	Cade Creek	----------	----------
472	------	E. W. Pereira	Scott River	125	10,000
512	------	J. A. Mathews	Scott River	175	----------
514	------	M. Marlahan and J. B. Davidson	Scott River	7.2	287
525	------	C. H. Barton	Indian Creek	----------	----------

SOLANO
SONOMA
STANISLAUS

64	77	Celso Tonella	Stanislaus River	0.875	70
165	58	Blanche B. Morton	Big Salada Creek	3	280
405	180	D. E. Kelliher	Little John Creek	2	160
406	181	Katherine Kelliher	Little John Creek	0.5	40
504	------	Oakdale Irrigation District	Stanislaus River	20	4,070

COUNTY.—None.

COUNTY.

Municipal		Mining		Power		Storage, acre feet	Estimated cost	Status
Second feet	Population	Second feet	Character	Second feet	Theoretical h.p.			
							$3,000	Permit issued.
							2,400	Permit issued.
				1,460	50,000			Rejected.
							750	Permit issued.
							100,000	Pending.
							200	Pending.
							800	Permit issued.
							10,000	Pending.
							500	Permit issued.
							250	Permit issued.
		12	Milling				1,500	Rejected.
							200	Pending.
								Permit issued.
							1,000	Permit issued.
							400	Pending.
						1,200	2,000	Pending.

COUNTY.

				30				Rejected.
		1	Milling				$350	Permit issued.
								Pending.

COUNTY.

								Rejected.
							$12,000	Pending.
		25	Placer				20,000	Permit issued.
				11	160		1,000	Permit Issued.
		12.5	Placer				500	Permit issued.
							4,000	Permit issued.
							100	Withdrawn by applicant.
		12	Placer				5,000	Permit issued.
							4,000	Permit issued.
							300	Permit issued.
				1	2		500	Pending.
							100	Pending.
		3	Placer			1	160	Permit issued.
							20,000	Withdrawn by applicant.
							3	Pending.
							125	Pending.
							50,000	Pending.
		12	Placer				1,000	Pending.
							48,500	Pending.
								Pending.
							1,500	Pending.
		12	Placer				5,000	Pending.

COUNTY.—None.

COUNTY.—None.

COUNTY.

							$2,500	Permit issued.
						83	1,500	Permit issued.
							5,000	Permit issued.
							1,250	Permit issued.
							8,000	Pending.

SUTTER

Application No.	Permit No.	Applicant	Source	Agricultural	
				Second feet	Acres
224	------	C. E. Williams	Snake River Drain. Ditch	20	----------
333	------	J. R. Catlett	E. by-pass of 1001 Dist.	7.5	960

TEHAMA

316	------	E. G. Hopson & A. L. Conard	Red Bank Creek	130	10,000
322	145	C. V. Clough	Mill Creek	----------	320
334	157	D. H. Masterson	N. Fork of Stony Creek	0.5	40
503	------	J. A. Davis, et al.	Lyman Springs	10	----------

TRINITY

1	------	R. S. Washington, et al.	Isinglass Lake	----------	----------
2	------	George Green	Hennessy Creek	1.25	10
28	20	W. H. Gray	Pony Bar Creek	0.44	35
166	93	James Chesbro	Dogwood Creek	1	100
197	61	L. O. Reese and C. H. Matthews	Rowski Creek	0.08	3
214	70	Joe Picotte	Price Creek	----------	----------
282	98	Henry Black	Baxter Gulch	0.32	25
321	122	C. H. Matthews	Lambeis Creek	0.07	3
323	------	W. S. Rose and S. M. Campbell	Manzanita Creek	----------	----------
357	182	E. J. Pryor	Manzanita Creek	----------	----------
371	------	Louisa S. Paulsen	Rush Creek	----------	----------
378	------	B. H. Randolph	Farley Creek	0.2	15
392	------	F. B. Hoffman	Rowdy and Pelletreau crs.	0.82	11
410	------	Louisa S. Paulsen	Rush Creek	----------	----------
424	134	Elsie R. Luckie	Unnamed spring	0.01	1
513	------	R. F. Lewis	Spring Gulch	0.25	----------
522	------	Peter Grel	Butter Creek	3	90

TULARE

19	------	John B. Newman Co.	Kaweah River, Mill Creek and Packwood Creek	25	360
32	------	Terra Bella Irrigation District	Dear Creek	----------	12,500
155	------	J. W. Wilson	White River	----------	----------
228	------	Lindsay-Strathmore Irrig. District	S. Fork Kaweah River	----------	8,600
229	------	Lindsay-Strathmore Irrig. District	N. Fork Tule River	----------	6,900
249	111	Matt Burlando	Tobias Creek	1	80
500	------	City of Los Angeles	S. Fork Kern River	----------	----------
520	------	C. W. Guerin	Whitney Creek and S. Fork of Kern River	----------	----------

TUOLUMNE

109.	------	G. F. Lumsden	Jawbone Creek	----------	----------
299	131	Eleanor Mining Co.	Jawbone Creek	----------	----------
402	163	R. C. Kennedy	Unnamed springs	----------	----------
517	------	R. L. Pierson and J. Diamond	Unnamed springs	2	10
523	------	Hazel Dell Mining Co.	Five Mile Creek	----------	----------

VENTURA

29	------	Sespe Light and Power Co.	Sespe Creek	250	50,000
37	------	Richard Tift	Seymour Creek	1	160
213	60	C. H. Manley	Bitter Creek	3	430
252	------	J. R. Ghiselin	Piru Creek	----------	----------
259	------	Sespe Light and Power Co.	Sespe River	----------	----------
455	------	T. C. Wood	Unnamed springs	2	10

COUNTY.

Municipal		Mining		Power		Storage, acre feet	Estimated cost	Status
Second feet	Population	Second feet	Character	Second feet	Theoretical h.p.			
--------	--------	--------	--------	--------	--------	--------	--------	Rejected.
--------	--------	--------	--------	--------	--------	--------	$250	Pending.

COUNTY.

--------	--------	--------	--------	--------	--------	30,000	$400,000	Pending.
--------	--------	--------	--------	--------	--------	480	300	Permit issued.
--------	--------	--------	--------	--------	--------	--------	1,600	Permit issued.
--------	--------	--------	--------	--------	--------	--------	--------	Pending.

COUNTY.

--------	--------	12.5	Milling	--------	--------	--------	--------	Rejected.
--------	--------	--------	--------	--------	--------	--------	$125	Pending.
--------	--------	--------	--------	--------	--------	--------	250	Permit issued.
--------	--------	--------	--------	--------	--------	--------	500	Permit issued.
--------	--------	--------	--------	--------	--------	--------	200	Permit issued.
--------	--------	1	Placer	--------	--------	--------	500	Permit issued.
--------	--------	--------	--------	--------	--------	--------	150	Permit issued.
--------	--------	--------	--------	--------	--------	--------	100	Permit issued.
--------	--------	7	Placer	--------	--------	--------	400	Withdrawn by applicant.
--------	--------	5	Placer	--------	--------	--------	500	Permit issued.
--------	--------	30	Placer	--------	--------	--------	2,000	Pending.
--------	--------	--------	--------	--------	--------	--------	400	Pending.
--------	--------	--------	--------	--------	--------	--------	350	Pending.
--------	--------	20	Placer	--------	--------	--------	5,000	Pending.
--------	--------	--------	--------	--------	--------	--------	125	Permit issued.
--------	--------	--------	--------	--------	--------	--------	600	Pending.
--------	--------	--------	--------	--------	--------	--------	450	Pending.

COUNTY.

--------	--------	--------	--------	--------	--------	--------	--------	Rejected.
--------	--------	--------	--------	--------	--------	25,000	$900,000	Pending.
--------	--------	7	Placer	--------	--------	--------	15,000	Pending.
--------	--------	--------	--------	--------	--------	10,000	230,000	Pending.
--------	--------	--------	--------	--------	--------	8,000	340,000	Pending.
--------	--------	--------	--------	--------	--------	--------	750	Permit issued.
--------	--------	--------	--------	200	18,000	--------	1,500,000	Pending.
--------	--------	--------	--------	--------	--------	150,000	--------	Pending.

COUNTY.

--------	--------	--------	--------	2.5	12	--------	$1,250	Rejected.
--------	--------	--------	--------	2	80	--------	1,800	Permit issued.
--------	--------	0.1	Milling	--------	--------	--------	700	Permit issued.
--------	--------	--------	--------	--------	--------	--------	700	Pending.
--------	--------	2.5	Milling	--------	--------	--------	--------	Pending.

COUNTY.

--------	--------	--------	--------	--------	--------	--------	$3,000,000	Pending.
--------	--------	--------	--------	--------	--------	--------	500	Pending.
--------	--------	--------	--------	--------	--------	--------	--------	Permit issued.
--------	--------	1,175	Hydraulic	--------	--------	9,100	250,000	Rejected.
--------	--------	--------	--------	88	10,000	57,750	2,000,000	Pending.
--------	--------	--------	--------	--------	--------	--------	--------	Pending.

YOLO

Application No.	Permit No.	Applicant	Source	Agricultural	
				Second feet	Acres
198	------	H. H. Gable	Oat Creek	2	160
243	------	H. H. Gable	Unnamed springs	1	6

YUBA

Application No.	Permit No.	Applicant	Source	Agricultural	
				Second feet	Acres
34	------	R. C. Saunders	Mill Creek	1	----------
361	136	Western Development Co.	Oregon House Creek	1.12	90
362	141	Emery Hunt	Oregon House Creek	1.25	100
450	------	R. Whitehead	Plumas L. and Feather R.	150	6,310
479	------	Farm Land Investment Co.	Feather and Yuba rivers	100	6,802
480	------	Farm Land Investment Co.	Feather R., Plumas and Messick lakes	150	6,420

COUNTY.

Municipal		Mining		Power		Storage, acre feet	Estimated cost	Status
Second feet	Population	Second feet	Character	Second feet	Theoretical h.p.			
--------	--------	--------	--------------	--------	--------	10	$1,600	Pending.
--------	--------	--------	--------------	--------	--------	8	1,600	Pending.

COUNTY.

--------	--------	--------	--------------	--------	--------	--------	------------	Rejected.
--------	--------	--------	--------------	--------	--------	3	$500	Permit issued.
--------	--------	--------	--------------	--------	--------	2	400	Permit issued.
--------	--------	--------	--------------	--------	--------	3,600	50,000	Pending.
--------	--------	--------	--------------	--------	--------	--------	31,000	Pending.
--------	--------	--------	--------------	--------	--------	--------	31,000	Pending.

AFTER THE WATER, THE PEOPLE.

Proper Use of the Water Means the Future Population and Prosperity of the State.

[Address by Irving Martin, member California State Water Commission, before the International Irrigation Congress.]

"Jack and Jill went up the hill to fetch a pail of water." "Went up the hill." We, of California, understand this to mean that the Mother Gooseites left their home in the valley of the San Joaquin, or Sacramento, or one of the many smaller valleys of the state, and scrambled up the high Sierras or the rocky Coast Range hills. They were not going on a picnic; it was a business trip. They were going after water. The enterprise was one fraught with danger and hardships, and you remember its tragic ending. Many other seekers after water have met with as tragic a fate, financially; but we are learning by experience—our own experience, and that of others.

In some respects I can not help thinking that Jack and Jill were wiser than we. It is a fair presumption that when they got the water they intended to put it to some useful and beneficial purpose, as is contemplated under the California water laws, and beyond that, to the highest measure of beneficial use, which is a logical outcome of the theory. They were settlers in the valley; they needed the water for their convenience, for their necessities. They were going after a pailful. They were not going to bring down more water than they could beneficially use. They were not going to waste a drop.

Possibly Jack and Jill were residents of southern California, where water is so valuable that the rivers run underground, self-preservation being Nature's first law. So valuable is water in certain sections that it is not improbable that some day the California State Water Commission will be called on to decide whether a San Bernardino raindrop is riparian or legally subject to appropriation. I am informed by a big abstract firm that frequently it is called on to furnish abstracts on water titles the same as on land titles.

What is it that gives such value to the water in the hills? Why, the fact that Jack and Jill—the people—have use, beneficial use, for it. It is the people that give value to the land, and it is the people that give value to the water. Land, Water, People. As unto the man is the woman, so unto the land is the water to millions of acres in our western domain—useless each without the other. But if the union of the land and the water bring not forth the people in goodly abundance to exercise the art of husbandry, then it is as dead sea apples that turn our meadows into alkali sumps or marshlands.

The development of water for irrigation is essential, is necessary, but closely linked with the development of water should be the development of the people. One is a necessary adjunct of the other. Colonization should be the handmaid of irrigation—not the colonization of the real estate promoter or of the exploiter, but the bringing of the poople to the irrigable land under conditions that give reasonable assurance of success through the application of industry and intelligence.

Great care and prudence should be used in irrigation projects. Old Davy Crockett said: "Be sure you're right, then go ahead." But, even so, it is not advisable to go ahead with too many projects at the same time. Better one enterprise fully developed and supporting the maximum of people than several that are languishing. Presumably, the assignment by the managers of this irrigation congress of two days to be devoted to the subject of colonizing irrigable land carries with it the suggestion that irrigation development has already outrun, or is likely to outrun, sufficient settlement. What better encouragement to irrigation enterprise than is afforded by the object lesson of a project carefully planned, successfully executed and prosperously tenanted? On the other hand, what greater deterrent than an enterprise ill conceived, or lacking sufficient water, or defective in its carrying out? So, the policy should be, "After the water, the people."

There are certain fundamental requirements for success in an irrigation enterprise: First, and most important of all, the water supply must be safe and sufficient. Then the system of distribution should be thorough and complete. Nearly as important as the water supply itself is the question of water disposal after use—drainage. Care should be taken in the application of water. Excessive use is not beneficial use. Too much water may do as much damage as too little. There are many instructive object lessons where fine, fertile land has been converted into swamps by the excessive use of water or the lack of proper drainage.

Transportation is an essential factor in successful agriculture or horticulture, anywhere. But the biggest factor of all in agricultural success is the price of land.

The poets speak of silver waters, but water would have to be golden to make some land pay at the speculative prices at which it is held. There is a limit to everything—even to the profitable productivity of irrigable lands. An orange grower has had a very profitable year—made a clean-up. Perhaps the preceding year was a good one, and also the one before that; but the next year a frost may come, not only damaging the crop, but killing large numbers of trees; or scale or some other pest may infest the trees. An alfalfa grower may cut several big crops this year and sell at good prices. The next year the price may hardly allow a profit. Peaches or pears or prunes or raisins may prove profitable one year, and the next year the market may be glutted. Average results are what should count. The record for a series of years is the only intelligent guide. Again, the success of some highly efficient grower is not a fair criterion. All growers are not highly efficient; all farmers are not crackajacks. The acid test of the productive value of land is the results obtained by the average man striking an average for a series of years.

Recently the California State Water Commission was making a trip of inspection. A landowner was very insistent that the commission immediately proceed to make an adjudication of the water rights on a certain creek. Adjudication of the rights—all the rights—on a stream is one of the functions of the commission. The party was very emphatic that the adjudication be done right away—that was what the commission was for, and the matter was one of great urgency. Here is the answer: The party had held for years land which admittedly was priced at about $10 per acre. A certain big enterprise came into the section, and the state had constructed a highway. Result: Land formerly worth $10 an acre now valued at $150. But note the next jump in value in contemplation. If the water rights were adjudicated by the state (at no expense to the landowner)—and the commission was assured that the party held the first right to the water, and of course there was no question in his mind but that the commission would decide in his favor—his land would then go to $500 per acre—selling value, not for taxable purposes, mind. Hence, the great importance of an early adjudication was obvious.

Isn't it just possible that too much water is going into land values in some instances instead of into the ground? There should be millions of drops for irrigation, but not one drop for inflation. On account of high prices much land is lying idle, or is being indifferently cultivated.

Summarizing the essentials for successful irrigation: Safety first in dependable water supply; efficient distribution and proper use; adequate drainage; transportation facilities, and a fifty-fifty price for land.

Located on good irrigable land under these conditions, the farmer should be able to work out his salvation. We need concern ourselves no longer with experimentation or consideration of the subject of whether irrigation pays. No more experiments are necessary. Irrigation is a demonstrated success. It pays. The cultivation of irrigable land is a business, just as is merchandising or manufacturing or transportation or any other business which renders a public service and is entitled to receive a fair profit in return. Cultivation of irrigable land can be made to pay without any special concession or privileges or anything further than the encouragement and legislative help which can be wisely and legitimately extended to any business. If irrigation can not be made to pay under the conditions specified, then there is something wrong with the land or with the individual; if with the land, it is a wilful waste of water to irrigate it; if the fault lies with the individual, the law of the survival of the fittest will eliminate him in time.

But there are many ways in which government can and very properly should assist in irrigation development. California, as a state, has already gone far in this direction. The greatest step was the legislation providing for the validation of the bonds of an irrigation district by a state commission, comprising the state engineer, the attorney general and the superintendent of banks. Before validating the bonds the commission has looked carefully into the soundness of the irrigation project. It has found that the supply of available water is sufficient for the needs of the district. It has inquired into the fertility of the soil and the necessary amount of water required for irrigation. It has also investigated the provisions for adequate drainage; in fact, the feasibility of the entire project has been gone into thoroughly. In a large way, government is interesting itself, and will take an increasing interest, in the conservation, storage and control of water. Projects that are too big for private capital will be handled by the state or nation, or by the two in conjunction. These bigger things offer an unlimited field for the energies and resources of the government, and it is this direction in which government aid should be extended.

The present water law of California, under which the water commission is acting, was designed to be of practical help to the irrigable land owner, and consideration for the irrigationist played a large part in the drafting of the law. A water right rests on the basis of beneficial use, which prevents the tying up of the water or its holding for speculative purposes. The application of the principle of beneficial use logically should and undoubtedly does mean the largest measure of beneficial use, which is the support of the largest population possible in prosperity and happiness, or, in other words, the colonization of irrigable lands, or the supplying of municipalities with water for domestic purposes.

Under the new California law a water right can not be capitalized beyond the nearly nominal sum expended in acquiring it. Beneficial use and non-capitalization operate effectively to knock out speculation. Another feature of the law is the adjudication of rights—of all the rights—on a stream, and this may be done by the commission of its own initiative, by petition of interested parties, or in suits at law involving water rights the commission may be called in as referee. The settling and establishing of water rights—all the rights—sweep the field clear of uncertainties, of costly and vexatious litigation, of obstruction, and opens the way for constructive work and development.

All these things the government has done, and rightfully, in aid of the cause of irrigation. No longer should there be any question as to whether the farming of irrigable land will pay. A very important factor in aid of the irrigationist is the attention which is being given and the great progress that is being made in the building of good roads and of interurban electrics. Cheap transportation is a necessary factor and link in profitable agriculture. The motor truck, while yet in its infancy, has proved its efficiency and is destined to play an increasingly important part in the transportation of farm products to market or to shipping depots. As illustrative of the possibilities along this line, I am informed that where the city of Los Angeles originally intended to construct a municipal railway to its deep-sea harbor at San Pedro, it has changed its plan and has decided to build a road for motor trucks to transport freight to and from the seaboard. This is forcefully suggestive of what is likely to take place in the near future. Then, again, who can foretell the possibilities of electric energy as applied to the propelling of vehicles?

With good roads, autos, telephones, rural mail deliveries, fine school facilities, civic centers, almost everything that makes city life attractive, in addition to many features which are denied to the city dweller, life on the irrigable farm should pay in dollars, should pay in health and should pay in pleasure.

RULES AND REGULATIONS.

The following rules and regulations governing the appropriation of water in California, in accordance with chapter 586, Statutes of 1913, are hereby adopted, to take effect September 1, 1915.

No rule or regulation shall, however, be construed to deprive the commission of its right to exercise the directory and mandatory powers conferred upon it by law, or to limit the amount or character of data required from applicants.

INTRODUCTORY.

The appropriation of water in California is now governed by the terms of the Water Commission Act (Statutes 1913, chapter 586), which was approved by popular vote at the election held November 3, 1914, and went into effect on December 19, 1914. Rights to the use of water must now be initiated by application to the Water Commission, as section 1415 of the Civil Code, providing for the posting and recording of notices, is no longer in force.

Most of the western irrigation states have adopted similar laws under which the state has assumed direct control of the appropriation and distribution of irrigation waters, in the public interest, in order that such waters shall be put to the highest beneficial use with, as far as may be, an avoidance of long, unnecessary and costly suits to determine the rights of various claimants to the use of the public waters of the state. California is the latest of these states to adopt such a law, and the approval of the act by the people of the state under the referendum of 1914 determines the will of the people that such a step should now be taken in California.

Application blanks have been prepared and will be furnished, free of charge, on request. The blanks are classified according to uses as follows: *Agricultural Purposes, Power Purposes, Mining Purposes, Municipal Water Supply.*

The procedure in acting on an application, very briefly stated, is as follows:

Upon the receipt by the commission of a complete application, published or other form of notice will be given to other users whose rights may be affected and, if protests are filed, hearings may be held to determine if a permit for the use of the water applied for may be granted. The steps to be taken are fully covered under separate headings in the rules adopted.

An application is not a permit to appropriate water until it is approved by the commission. Upon approval of any application, a copy of the original application, with such approval endorsed thereon, will be given to the applicant. In its approval the commission will specify the time for beginning and for completing the work of construction and the time within which the water appropriated must be put to a beneficial use. Such approved application, or permit, will be filed in the office of the commission, and also in the office of the recorder of the county in which the point of diversion lies. When the terms of the permit have been complied with, a license will be issued to the applicant, as evidence of his water right.

For the mutual protection of the applicant and prior claimants, notice of the application will be given so that protests may be filed, if desired. Although vested rights to the use of water from the source from which the appropriation is sought can not be lost, prejudiced or impaired by failure to protest against an application, it is recommended that all prior claimants, for the protection of their own interests, should inform the commission if they have reason to believe that the granting of a permit for the proposed appropriation will conflict with their rights. Unnecessary litigation may be avoided if such action be taken.

A permit or a license to appropriate water is not an assurance by the state of a sufficient water supply, nor a guarantee of protection by the state against prior claimants. It does assure the appropriator that upon compliance with its provisions, his priority is definitely established as of the date of his application, and that in this regard the state will protect him against subsequent claimants.

The commission is authorized by section 24 of the Water Commission Act to ascertain the relative rights of the various claimants to the use of water from a source of supply. Before such ascertainment becomes final and binding, it must be approved, or modified, by the superior court in an action initiated by the state or one of the claimants. Owing to the time thus necessitated in securing a full adjudication of the relative rights, no attempt will be made, in passing upon applications to appropriate, to ascertain all of the existing rights except in unusual cases.

An outline of the procedure relative to ascertainments is set forth in sections 24 to 36, inclusive, of the Water Commission Act. The details of such procedure will be governed by a separate set of rules and regulations.

RULES AND REGULATIONS.

1. **Priority**. The priority of right secured by an application dates from the time it is filed in the office of the Water Commission, but no application can be considered as filed until the filing fee (see 19 hereof)

has been paid. Defective applications will be returned for correction and sixty days will be allowed for refiling without loss of priority.

2. **The Application.** The application shall be typewritten or written in ink and filed in duplicate.

3. **Source.** Where the water desired is to be taken from more than one stream, lake, or other body of water, a separate application shall be made for each source. It is permissible, however, to specify two or more sources of supply in one application when the water from such sources is to be conveyed to one diverting channel, commingled, and used for one purpose.

4. **Amount.** The amount of water applied for shall be limited to the amount that can be put to beneficial use. Applications for an amount beyond this can not be approved.

5. **Purpose.** A separate application shall be made for the appropriation of water for each of the following purposes: agricultural purposes, power purposes, mining purposes, municipal water supply. The appropriation of water for any of said purposes will include water for domestic purposes. Where it is desired to appropriate water for domestic purposes only, the forms for agricultural purposes should be used. When water has been appropriated for one purpose, it is unlawful to use it for another purpose (excepting domestic purposes) without first securing a permit or license from the commission for such use.

6. **Point of Diversion.** A separate application shall be made for each diversion. It is permissible, however, to specify two or more points of diversion in one application where the proposed conduits are to be used to irrigate the same parcels of land, or convey water to the same power house, or are to be combined into a single conduit.

7. **Maps.** Each application shall be accompanied by a map in duplicate—one copy on tracing linen and the other a print of such tracing. It is not necessary to delay filing an application in order to finish survey and map work. The application, although incomplete, should be filed to avoid loss of priority, and should be accompanied by a statement of the time necessary for the completion of the survey and map and the procurement of other data for perfecting the application.

The map shall be neatly and accurately drawn with India ink, and shall be not larger than 28 inches by 40 inches and not smaller than 24 inches by 36 inches.

The map shall show the location of the point of diversion by courses and distances from some government corner. If on unsurveyed land, the distances and bearings may, if the nearest existing corner of the public survey is more than two miles distant, be taken from a permanent mark on some natural object or permanent monument that can be readily found and recognized. The location of the headgate shall be indicated. The location of the main ditch or canal shall be shown throughout. and where government survey lines are crossed, frequent ties to section corners shall be shown.

The map shall show the name and location of the stream from which water is to be taken and the location and area (in acres) of land to be irrigated, or place where water is to be used for other purposes. (This may be done by marking the boundaries, or by coloring the areas.) Where the appropriation is for irrigation purposes, the estimated acreage to be irrigated in each 40-acre tract shall be written on the map in all cases where the full 40-acre tract is not to be irrigated.

Wherever the canal line crosses streams, or other ditches, the location of such crossings shall be shown and such intersecting streams and ditches can be more clearly shown by using ink of a different color.

Maps shall show the name of the ditch, canal, or reservoir, and the certificate of surveyor as given below.

If water power is to be developed, a profile of that portion of the canal wherein the power is to be developed shall be shown on the map, or accompany same.

Maps shall be filed with all applications, but for appropriations of three cubic feet per second or less such maps need not be prepared by a surveyor nor conform to the full requirements specified above, unless so ordered by the commission.

The map of a reservoir shall show the total area to be submerged and enough levels to permit of computing its capacity in acre-feet. For large reservoirs, contours of 5 or 10-foot intervals shall be shown.

CERTIFICATE OF SURVEYOR.

NOTE.—This certificate shall be neatly lettered on the map and signed by the surveyor.

I, ------------------------, of ------------------------, do hereby certify that this map was made from notes taken during an actual survey made by me (or under my immediate supervision) on ----------------------, 191--, and that it correctly represents the works described in the accompanying application, the location of streams and other ditches in the immediate vicinity, and the acreage to be irrigated.

Surveyor.

8. **Notice.** After an application has been filed in full compliance with the Water Commission Act and the rules and regulations established thereunder for in excess of three cubic feet per second, the commission will instruct the applicant to publish notice thereof, in a form to be prescribed by the commission, in some newspaper of general circulation published within the stream system, selected by the applicant subject to the approval of the commission, once a week for four consecutive weeks (which requirement of publication is hereby construed

to mean, for the purposes of this paragraph, four insertions and no more). Proof of publication shall be filed with the commission within sixty days from the date of its instruction to make publication.

In cases where the application is for the appropriation of not more than three cubic feet per second, the commission will attempt to reach prior appropriators by letter. For this purpose the applicant should use the form printed on the application for submitting a list of the names and addresses of all claimants, known to him, of the waters of the same source below the point of diversion or storage. The commission may order the publication of notice of application for amounts not in excess of three cubic feet per second where it is not practicable to reach the prior appropriators by mail.

9. **Protests.** Any person, corporation or association interested may, at any time within the period specified in the notice, file with the commission a written protest against the granting of said application. A copy of said protest shall be served upon the applicant. It shall set forth the protestant's reasons for the rejection of said application, and affidavits substantiating such reasons shall also be filed when required. Applicant shall file an answer to any protest within the time allowed by the commission. Any answer, brief or form of reply filed herein shall be brought to the attention of the other party by furnishing him with a copy of same. Such copies shall be made and furnished by the person making the charge (or a response to a charge) against an application, as the case may be.

10. **Hearings.** The commission will make an inspection of a proposed appropriation when necessary, and may, in its discretion, if the facts warrant it, set a time and place for holding a hearing. No hearing shall be held except after fifteen days notice by registered mail to both the applicant and protestant, which notice shall give the time and place at which said hearing is to be held.

11. **Subpœnas.** Upon the request of any party, or of its own motion, the commission may issue a subpœna for the production of any persons, papers, records and books in all transactions before said commission. Subpœnas may be served upon the person, or persons, therein named, by any person over the age of twenty-one years. Due proof of such service shall consist of the acknowledgment in writing, or such service by the party named in such subpœna, or by the certificate to that effect of the person serving same.

12. **Witness Fees.** The fees and mileage allowed witnesses called to testify before the commission, as herein provided, by subpœna, shall be the same as those allowed in the superior courts of the state in civil cases, as provided in section 4300*g* of the Political Code of this state. The fees and mileage of any witness shall be paid by the party on whose behalf such witness was called.

13. **Cost of Hearings.** The costs of taking testimony at a hearing shall be borne by the parties thereto as follows: Each party shall pay for the direct examination of his own witness and the cross-examination of opponent's witness and also for the proportionate part of the charges made by the referee. Arrangements for charges hereunder shall be made with such referee or reporter by the parties and all claims or charges against any party shall be settled before the testimony submitted by such party will be considered. One copy of the transcript of testimony taken at the hearing shall be furnished to the commission and the cost thereof borne equally by the parties.

14. **Irrelevant Testimony.** In the event that either party at a hearing shall pursue a line of interrogation of a witness that is clearly irrelevant, the commission shall summarily put a stop to such interrogation.

15. **Briefs.** At the close of a hearing thirty days will be allowed the parties in which to file briefs, which time will be extended upon a showing satisfactory to the commission. Applicant shall file his opening brief within ten days from the close of taking testimony. Protestant shall file his reply brief within fifteen days of the filing of applicant's opening brief. Applicant shall then have five days within which to file his closing brief. Copies of briefs shall be served upon the other party and a duly certified copy, with proof of service on opposing party, shall be filed with the commission.

16. **Attorneys or Agents.** When an applicant or protestant is represented by an agent or attorney, such agent or attorney shall immediately enter his appearance before the commission and thereupon will be recognized as fully controlling the case on behalf of his client. When an applicant or protestant is represented by more than one agent, or attorney, service of notice, or other papers, upon one of such agents or attorneys shall be sufficient.

17. **Power Sites on Public Lands.** No application for the appropriation of water for power purposes involving the use of public lands of the United States will be approved by the Water Commission prior to notification by the proper federal officer that a complete application (with the exception of evidence of water appropriation) for the use of the public lands has been filed in conformity with the regulations of the secretary of the interior or of the secretary of agriculture.

18. **Inspection of Records.** No application, or documents relating thereto, will be allowed under any circumstances to be taken from the custody of the commission; but access to the same, under proper rules, will be permitted.

19. **Filing Fees.** Applications shall be accompanied by the proper fees.

INTERESTING INFORMATION FOR THE GENERAL PUBLIC AND PROSPECTIVE APPLICANTS.

The terms used in dealing with applications before the Water Commission oftentimes appear to be confusing to some applicants. Below is given some of the principal terms so used, with an explanation of the same which should be found useful to many.

DUTY OF WATER.

By the term "Duty of Water" is meant the relationship between a given quantity of irrigation water and the area of land it is made to serve. In the irrigation of such crops as alfalfa, etc., it is the practice of the commission to fix the gross duty of the water as 80 acres to the second-foot. By the gross duty is meant the amount of water diverted at the headworks of the canal system and not the actual amount as applied to the land.

UNITS OF WATER MEASUREMENTS.

The Inch: This unit is a variable unit having different meanings in different states. The old miner's inch of California was the quantity of water flowing freely through an opening one inch square, the center of which was four inches below the surface of the water standing above the opening, and which is equivalent to nine gallons per minute or one-fiftieth cubic foot per second. The new California miner's inch is measured under a six-inch pressure, and is equivalent to eleven and one-fourth gallons per minute or one-fortieth cubic foot per second. The commission uses the new California inch in its computations.

The Second-Foot or Cubic Foot per Second: This unit represents an exact and definite quantity of water, viz: the equivalent of a stream one foot wide and one foot deep, flowing at the rate of one foot per second.

The Acre-Foot: This is the equivalent of a body of water one foot deep over an area of one acre.

TABLE OF EQUIVALENTS.

One new California miner's inch equals 1/40 cubic foot per second; equals 11¼ gallons per minute; equals 675 gallons per hour; equals 16,200 gallons per day; equals .0495 acre-feet per day.

One second-foot equals 40 new California miner's inches; equals 7.48 United States gallons per second; equals 448.8 gallons per minute; equals 26,928 gallons per hour; equals 646,317 gallons per day; equals 1.98 acre-feet per day.

One acre-foot equals 43,560 cubic feet.

One million United States gallons per day equals 1.55 second-feet.

One million United States gallons equals 3.07 acre-feet.

One horsepower equals 550 foot-pounds per second.

One horsepower equals 746 watts.

One horsepower equals 1 second-foot falling 8.8 feet.

To calculate theoretical horsepower, multiply amount of water in second-feet by vertical fall in feet, and divide by 8.8.

A GOVERNMENT CORNER.

In surveying the land originally, the government set stakes or by other means located the four corners of every section. These are called section corners. Half way between these main section corners on every section line are supposed also to have been set the stakes called quarter section corners. In some places these corners will be marked by a mound of rocks or a tree, where a stake is not used. In many instances, even where stakes are set, the field notes of the surveyor will locate that stake by direction and distance from a tree which is known as a ''witness tree.'' As these surveys were made many years ago, as far back as the eighties, a great many of the government corners have become obliterated by one means or another, making it difficult or almost impossible for the average person to find them without the assistance of a surveyor. While it is usual to locate the section corner closest to the proposed point of diversion of water from a stream or other source, any other government section farther away may be used equally as well if it can be located more readily. In locating a government corner, help may be found by going or writing to the Surveyor General of the state for a copy of the original field notes from which description the location of the corner may better be found. The stakes set for government corners were about four inches square, with the section, township and range described on same.

The smallest legal subdivision of the public land survey is 40 acres.

"BEARING" OR "COURSE" AND DISTANCE.

The expression, ''Bearing and Distance,'' or ''Course and Distance,'' is explained as follows:

By the ''bearing'' or ''course'' of a line is meant the smaller of the two angles formed by the north and south line passing through the end of a given line. The bearing is always measured from the north point or the south point so many degrees east or west.

To Illustrate:

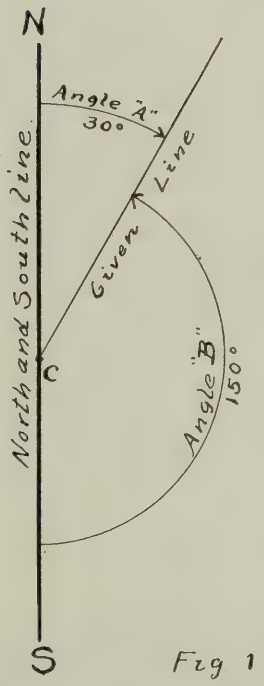

Figure I.

Figure 1. The north and south line passes through the given line at point "C." The smaller of the two angles made by the north and south line and the given line is angle "A." The direction of the given line is the course or bearing from the point "C," which would be the government corner. This line bears in a northerly direction and 30 degrees east of north, and would be designated as bearing north, 30 degrees east, and if a point of diversion were anywhere on that given line, the above would be the way to express it, of course specifying the number of feet between the two points also.

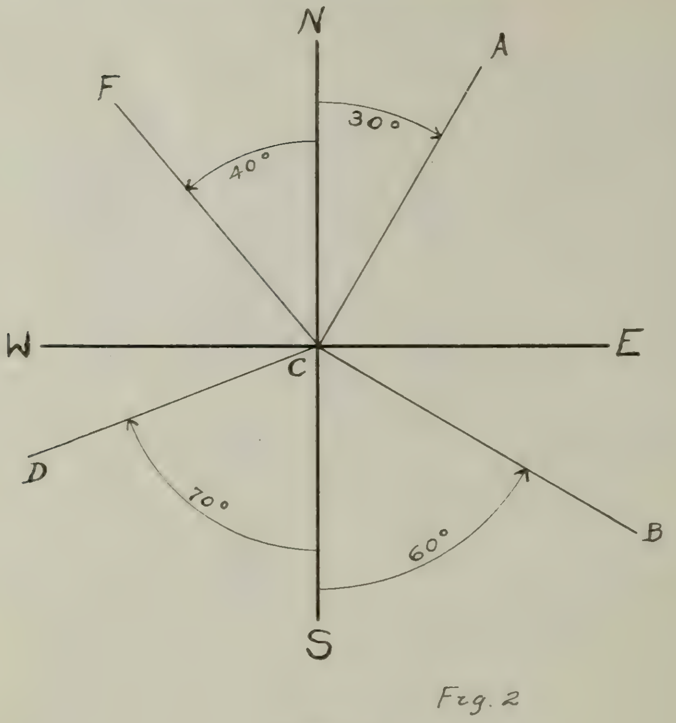

Figure II.

Figure 2. As the bearing of a line is always measured from a north point or a south point so many degrees east or west, the arrows in figure 2 will illustrate the four possible directions in which bearings are measured. Thus the bearing of line "CA" is north, 30 degrees east; that of "CB," south, 60 degrees east; of "CD," south, 70 degrees west; and of "CF," north, 40 degrees west. In any case, "C" would be a government corner and any point on the four lines above mentioned could be the point of diversion.

How to "Locate" a Point of Diversion:

The average applicant can locate his point of diversion, as required by the commission, without the assistance of a surveyor, by consulting the following:

In the diagram printed below the four main section corners are shown with the four quarter section corners. Assuming that the applicant can more easily locate the quarter section corner on the west line of section 15, he then runs south until at a point directly opposite his point of diversion. Let us say this proves to be 990 feet. He then runs east until he comes to the point of diversion which he finds, say, to be 1,000 feet.

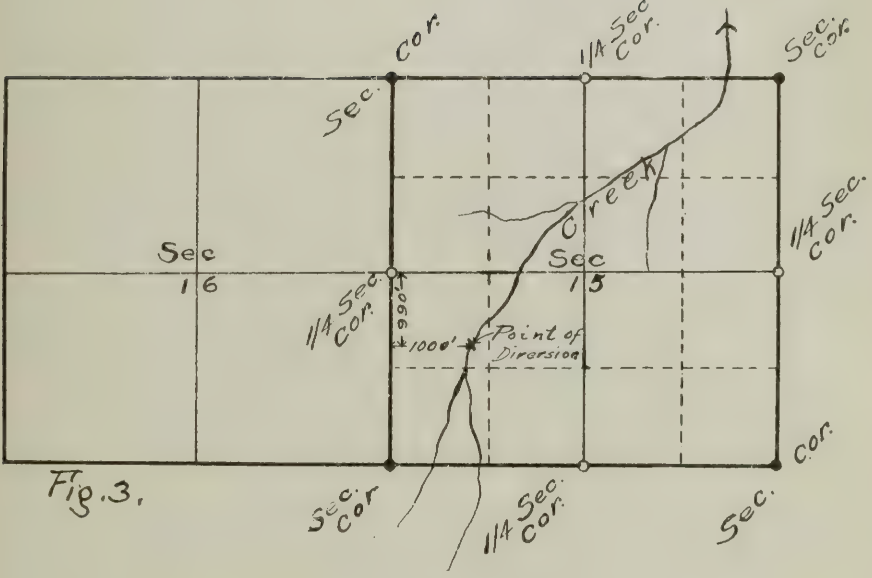

Figure III.

Now, if the engineering department of the Water Commission has information like the above, it can easily compute the "course" or "bearing" and distance of the point of diversion from the government corner. The "course" or "bearing" in this case is the direction in which the point of diversion lies from the quarter section corner used, and the distance will be the number of feet, yards, rods, or whatever the unit of measurement used may be, that the point of diversion is distant from the government corner in a straight line connecting the two points. This same method can be followed by using any government corner which the applicant may choose.

HOW TO MAKE A MAP.

On opposite page is shown on reduced scale a sample of map which must accompany every application. These small sample maps are supplied to applicants. On this map, examples are given of two separate diversions, a single map being used for the sake of space. The diversion in township 11 is for power purposes, the point of diversion being "tied" by bearing and distance to a government section corner as shown.* The other point of diversion is farther down the stream and is for agricultural or irrigation purposes, as is indicated by the sketch showing ditch line and lands to be irrigated, which are the shaded portion. This diversion is "tied" to a section corner also by bearing and distance. The number of feet should also be given.* This method assures the applicant against any future question as to the exact location of his point of diversion. Two such diversions as are shown on this map could be made on this stream. A power project might divert all the water from the main creek above and conduct it to the power house marked P. H. in section 18. Here, after generating power, it would be turned back into the stream to be taken up and used for irrigation.

---

*If the point of diversion is located as shown in Fig. 3, the engineering department can compute the bearing and distance for applicant.

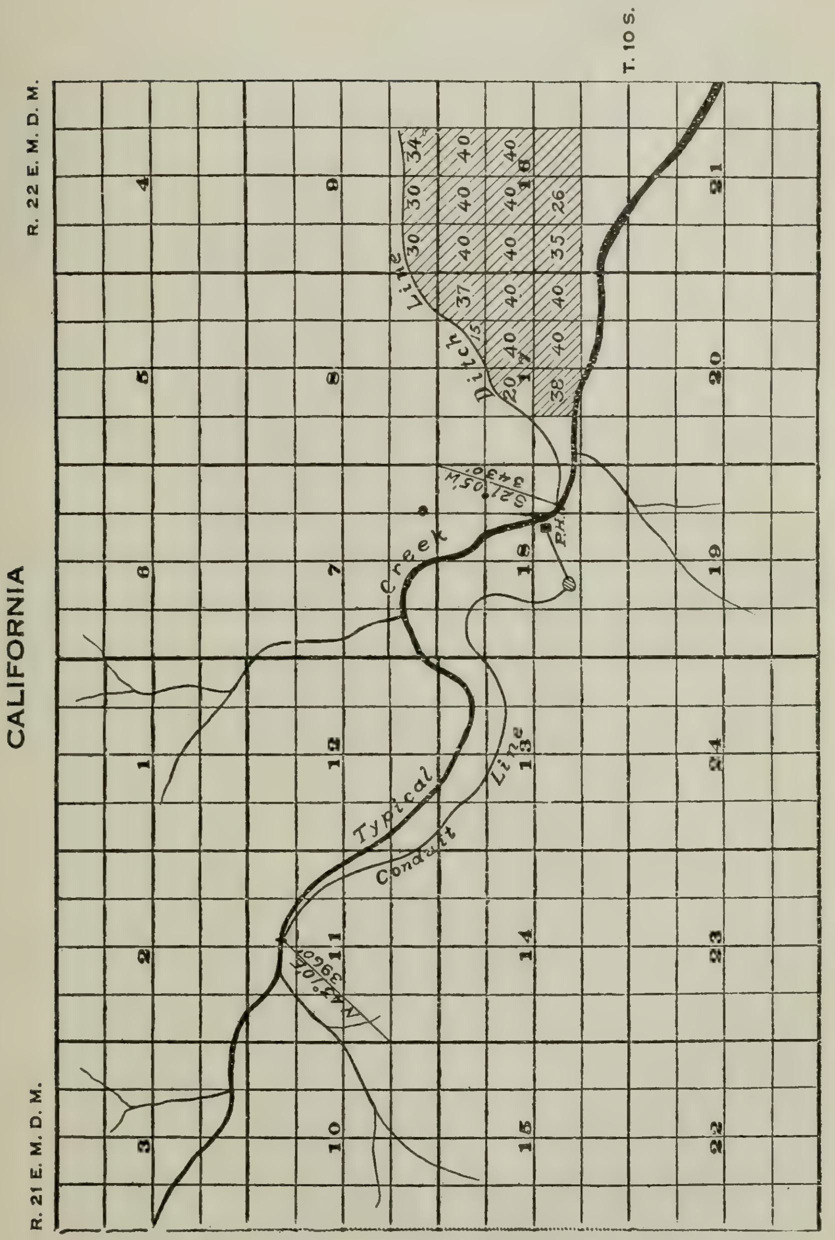
CALIFORNIA
R. 22 E. M. D. M.
R. 21 E. M. D. M.
T. 10 S.
4
9
16
21
5
8
17
20
6
7
18
19
1
12
13
24
2
11
14
23
3
10
15
22
Typical Conduit Line
Creek
Ditch Line
P.H.
S 21° 05' W 3430'
N 31° 10' E 3960'
34
40
40
30
40
40
26
30
40
40
35
37
40
40
15
40
40
40
20
38

Figure IV.

FORMS.

Forms of the Four Different Application Blanks Used by the Water Commission, and Notices for Forest Supervisor, Postmaster, Newspaper and Proof of Appropriation.

[There are some twenty different forms in all used by the commission under various conditions of the work.]

FILE IN DUPLICATE.

☞ For full information regarding the filling out and filing of this form send for Rules and Regulations of the Commission governing appropriation of water.

APPLICATION No.__________

APPLICATION FOR A PERMIT

TO APPROPRIATE UNAPPROPRIATED WATERS OF THE STATE OF CALIFORNIA

FOR AGRICULTURAL PURPOSES.

I, ____
(Name of Applicant)

of ______________________________County of ____________________________
(Post office)

State of__________________________, do hereby make application for a permit to appropriate the following described unappropriated waters of the State of California, SUBJECT TO EXISTING RIGHTS:

If the applicant is a corporation, give date and place of incorporation__________

____

1. The source of the proposed appropriation is______________________________
(Name of stream, lake, or other source)

located in____________________County, tributary of________________________

2. The amount of water which the applicant intends to apply to beneficial use is ____cubic feet per second.
(One cubic foot per second equals 40 miner's inches)

3. The use to which the water is to be applied is___________________________

4. The point of diversion is located______________________________________

____

____
(Give distance and bearing to section corner)

____

being within the____
(Give smallest legal subdivision not to exceed 40 acres)

____

of Sec.______Tp.______R.______, M., in the county of____________________

5. The________________________to be___________miles in length, terminating
(Main ditch, canal or pipe line)

in the____of Sec.______
(Smallest legal subdivision)

Tp.______R.______ M., the proposed location being shown throughout on the accompanying map.

6. The name of the ditch, canal or other works is__________________________

____

DESCRIPTION OF WORKS.

Diversion works—

7. (*a*) Height of dam----------feet; length on top---------feet; length at bottom ----------feet; material to be used and character of construction------------------
(Loose rock, concrete,
----
masonry, rock and brush, timber crib, etc., wasteway over or around dam)

(*b*) Description of headgate--
(Timber, concrete, etc.,
----
number and size of openings)

NOTE.—In case of insufficient space for answers in form attach extra sheets.

Canal system—

8. Give dimensions at each point of canal where materially changed in size, stating miles from headgate:

(*a*) At headgate: Width on top (at water line)--------feet; width on bottom ------------feet; depth of water------------feet; grade------------feet fall per one thousand feet.

(*b*) At---------miles from headgate. Width on top (at water line)--------- feet; width on bottom---------feet; depth of water---------feet; grade--------- feet fall per one thousand feet. (Attach sheet covering other changes.)

Storage reservoir—

9. The amount of water to be stored is--------------acre-feet.

10. The location of the proposed reservoir will be in----------------------------
(Give 40-acre subdivisions)

----

11. The dam will be located in---
(40-acre subdivisions)
Sec.---------Tp.---------R.---------, M. It will be---------feet in height; length on top---------feet; length on bottom---------feet; width on top--------- feet; slope of front or water face-----------------; slope on back-----------------;
(Feet horizontal to 1 vertical) (Feet horizontal to 1 vertical)
height of dam above water line when full----------------feet.

12. Character of construction of dam and the materials of which it is to be built
----
----

13. Estimated cost of proposed works, $------------------------------------

14. Construction work will begin on or before------------------------------

15. Construction work will be completed on or before--------------------------

16. The water will be completely applied to the proposed use on or before--------

17. The land to be irrigated has a total area of____________acres, located in each forty-acre tract as follows:

____

____

____

18. Irrigation will begin about___________ (Month) and end about___________ (Month) of each year.

19. It is understood and agreed that this application and the permit and license which may be granted hereunder shall be subject to all the conditions set forth in Section 20 of the Water Commission Act (Statutes 1913, Chapter 586). (Copy of this section appears on each application).

____
(Name of Applicant)

____

Signed in the presence of us as witnesses:

1. ________________________ (Name) ________________________ (Address)

2. ________________________ (Name) ________________________ (Address)

For the use of the Water Commission in sending notices as provided in Rule 8, Page 8 of Rules and Regulations, the applicant should answer the following questions:

1. What is the name of the post office most used by those living near the proposed point of diversion?____

____

2. What are the names and addresses of claimants of water from the source of supply below the proposed point of diversion?______________________________

____

____

____

____

____

____

____

____

____

PERMIT No.____________

STATE OF CALIFORNIA, } ss.
County of______________________ }

This is to certify that we have examined the application of which the foregoing is a true and correct copy and do hereby grant the same, subject to VESTED RIGHTS and the following limitations and conditions, in addition to those enumerated in Section 20 (Statutes 1913, Chapter 586) set forth above______________________

____

____

____

Actual construction work shall begin on or before____________________________ and shall thereafter be prosecuted with reasonable diligence, and if not so commenced and prosecuted this permit may be revoked.

The amount of water appropriated shall be limited to the amount which can be applied to beneficial use and shall not exceed___________cubic feet per second, or its equivalent in case of rotation.

Said construction work shall be completed on or before______________________

____

Complete application of the water to the proposed use shall be made on or before

____

WITNESS our hands this_________day of_________________19____

____

____

____

State Water Commission.

FILE IN DUPLICATE.

☞For full information regarding the filling out and filing of this form send for Rules and Regulations of the Commission governing appropriation of water.

APPLICATION NO.__________

APPLICATION FOR A PERMIT

TO APPROPRIATE UNAPPROPRIATED WATERS OF THE STATE OF CALIFORNIA

FOR MINING PURPOSES.

I, ____
(Name of Applicant)

of ______________________________County of ______________________________
(Post office)

State of___________________________, do hereby make application for a permit to appropriate the following described unappropriated waters of the State of California, SUBJECT TO EXISTING RIGHTS:

If the applicant is a corporation, give date and place of incorporation__________
____

1. The source of the proposed appropriation is______________________________
(Name of stream, lake, or other source)
located in_____________________County, tributary of________________________

2. The amount of water which the applicant intends to apply to beneficial use is
____cubic feet per second.
(One cubic foot per second equals 40 miner's inches)

3. The use to which the water is to be applied is___________________________
____

4. The point of diversion is located______________________________________
____
(Give distance and bearing to section corner)
____
being within the____
(Give smallest legal subdivision not to exceed 40 acres)
of Sec.______Tp.______R.______, M., in the county of_____________________

5. The_________________________to be____________miles in length, terminating
(Main ditch, canal or pipe line)
in the____of Sec.______
(Smallest legal subdivision)
Tp.________R.______, M., the proposed location being shown throughout on the accompanying map.

6. The name of the ditch, canal or other works is___________________________
____

DESCRIPTION OF WORKS.

Diversion works—

7. (*a*) Height of dam__________feet; length on top_________feet; length at bottom __________feet; material to be used and character of construction__________________
(Loose rock, concrete,
____
masonry, rock and brush, timber crib, etc., wasteway over or around dam)
____

(*b*) Description of headgate____
(Timber, concrete, etc.,
____
number and size of openings)
____

NOTE.—In case of insufficient space for answers in form attach extra sheets.

Canal system—

8. Give dimensions at each point of canal where materially changed in size, stating miles from headgate:

(*a*) At headgate: Width on top (at water line)_________feet; width on bottom ___________feet; depth of water___________feet; grade___________feet fall per one thousand feet.

(*b*) At__________miles from headgate. Width on top (at water line)_________ feet; width on bottom__________feet; depth of water__________feet; grade_________ feet fall per one thousand feet. (Attach sheet covering other changes.)

Storage reservoir—

9. The amount of water to be stored is______________acre-feet.

10. The location of the proposed reservoir will be in___________________________
(Give 40-acre subdivisions)
____
____
____

11. The dam will be located in____
(40-acre subdivisions)
Sec.__________Tp.__________R.__________, M. It will be__________feet in height; length on top__________feet; length on bottom__________feet; width on top_________ feet; slope of front or water face_________________; slope on back________________;
(Feet horizontal to 1 vertical) (Feet horizontal to 1 vertical)
height of dam above water line when full_______________feet.

12. Character of construction of dam and the materials of which it is to be built
____
____

13. Estimated cost of proposed works, $______________________________________

14. Construction work will begin on or before___________________________________

15. Construction work will be completed on or before____________________________

16. The water will be completely applied to the proposed use on or before________

17. The nature of the mines to be served____________________________________

____

18. Location of the mines____
(Describe by 40-acre subdivisions)

____

____

19. Methods of supplying and utilizing the water______________________________

____

____

20. Is water to be returned to any stream?___________
(Yes or no)

21. If so, name stream and locate point of return______________________________
(Locate within 40-acre subdivision)

Sec.___________Tp.____________R.____________, M.

22. It is understood and agreed that this application and the permit and license which may be granted hereunder shall be subject to all the conditions set forth in Section 20 of the Water Commission Act (Statutes 1913, Chapter 586). (Copy of this section appears on each application.)

____
(Name of Applicant)

____

Signed in the presence of us as witnesses:

1. ____
(Name) (Address)

2. ____
(Name) (Address)

For the use of the Water Commission in sending notices as provided in Rule 8, Page 8 of Rules and Regulations, the applicant should answer the following questions:

1. What is the name of the post office most used by those living near the proposed point of diversion?____

____

2. What are the names and addresses of claimants of water from the source of supply below the proposed point of diversion?______________________________________

____

____

____

____

____

____

____

____

____

PERMIT No.____________

STATE OF CALIFORNIA,
County of________________________ } ss.

This is to certify that we have examined the application of which the foregoing is a true and correct copy and do hereby grant the same, subject to VESTED RIGHTS and the following limitations and conditions, in addition to those enumerated in Section 20 (Statutes 1913, Chapter 586) set forth above________________________ ____ ____ ____

Actual construction work shall begin on or before______________________________ and shall thereafter be prosecuted with reasonable diligence, and if not so commenced and prosecuted this permit may be revoked.

The amount of water appropriated shall be limited to the amount which can be applied to beneficial use and shall not exceed____________cubic feet per second, or its equivalent in case of rotation.

Said construction work shall be completed on or before________________________ ____

Complete application of the water to the proposed use shall be made on or before ____

WITNESS our hands this_________day of__________________19____

____

____

____
State Water Commission.

FILE IN DUPLICATE.

PERMIT NO.____________

APPLICATION FOR A PERMIT

TO APPROPRIATE UNAPPROPRIATED WATERS OF THE STATE OF CALIFORNIA

FOR POWER PURPOSES.

I, ____
(Name of Applicant)

of ________________________________County of ___________________________
(Post office)

State of____________________________, do hereby make application for a permit to appropriate the following described public waters of the State of California, SUBJECT TO EXISTING RIGHTS:

If the applicant is a corporation, give date and place of incorporation___________

____

1. The source of the proposed appropriation is________________________________
(Name of stream, lake, or other source)

located in______________________County, tributary of________________________

2. The amount of water which the applicant intends to apply to beneficial use is ____cubic feet per second.
(One cubic foot per second equals 40 miner's inches)

3. The use to which the water is to be applied is____________________________

____

4. The point of diversion is located.____

____
(Give distance and bearing to section corner)

____

being within the____
(Give smallest legal subdivision not to exceed 40 acres)

of Sec.______Tp.______R.______, M., in the county of______________________

5. The__________________________to be____________miles in length, terminating
(Main ditch, canal or pipe line)

in the____of Sec.______
(Smallest legal subdivision)

Tp.______R.______ M., the proposed location being shown throughout on the accompanying map.

6. The name of the ditch, canal or other works is______________________________

____

DESCRIPTION OF WORKS.

Diversion works—

7. (*a*) Height of dam__________feet; length on top_________feet; length at bottom __________feet; material to be used and character of construction____________________
(Loose rock, concrete,

____
masonry, rock and brush, timber crib, etc., wasteway over or around dam)

____

(*b*) Description of headgate____
(Timber, concrete, etc

____
number and size of openings)

____

NOTE.—In case of insufficient space for answers in form attach extra sheets.

Canal system—

8. Give dimensions at each point of canal where materially changed in size, stating miles from headgate:

(*a*) At headgate: Width on top (at water line)_________feet; width on bottom ____________feet; depth of water____________feet; grade____________feet fall per one thousand feet.

(*b*) At__________miles from headgate. Width on top (at water line)__________ feet; width on bottom__________feet; depth of water__________feet; grade__________ feet fall per one thousand feet. (Attach sheet covering other changes.)

Storage reservoir—

9. The amount of water to be stored is________________acre-feet.

10. The location of the proposed reservoir will be in____________________________
(Give 40-acre subdivisions)

____

____

____

11. The dam will be located in____
(40-acre subdivisions)

Sec.__________Tp.___________R.___________, M. It will be__________feet in height; length on top__________feet; length on bottom__________feet; width on top__________ feet; slope of front or water face__________________ (Feet horizontal to 1 vertical); slope on back__________________ (Feet horizontal to 1 vertical); height of dam above water line when full________________feet.

12. Character of construction of dam and the materials of which it is to be built

____

____

13. Estimated cost of proposed works, $____________________________________

14. Construction work will begin on or before___________________________________

15. Construction work will be completed on or before______________________________

16. The water will be completely applied to the proposed use on or before_________

17. The nature of the works by means of which the power is to be developed-----

18. Total fall to be utilized------------feet.
(Head)

19. The use to which power is to be applied is------------------------------------

20. Total amount of power to be developed--------------theoretical horsepower.

21. Such works to be located in--
(40-acre subdivision)

of Sec.-----------Tp.-----------R.-----------, M.

22. Is water to be returned to any stream?-----------
(Yes or no)

23. If so, name stream and locate point of return------------------------------
(Locate within 40-acre subdivision)

Sec.-----------Tp.-----------R.-----------, M.

24. It is understood and agreed that this application and the permit and license which may be granted hereunder shall be subject to all the conditions set forth in Section 20 of the Water Commission Act (Statutes 1913, Chapter 586). (Copy of this section appears on each application.)

(Name of Applicant)

Signed in the presence of us as witnesses:

1. --
(Name) (Address)

2. --
(Name) (Address)

STATE OF CALIFORNIA, } ss.
County of------------------------}

This is to certify that we have examined the foregoing application, together with the accompanying maps and data, and return the same for correction or completion as follows:

In order to retain its priority, this application must be returned to the State Water Commission, with corrections, on or before--------------19----

WITNESS our hands this---------day of----------------19----

State Water Commission.

PERMIT No.___________

STATE OF CALIFORNIA, } ss.
County of________________________ }

This is to certify that we have examined the application of which the foregoing is a true and correct copy and do hereby grant the same, subject to VESTED RIGHTS and the following limitations and conditions, in addition to those enumerated in Section 20 (Statutes 1913, Chapter 586) set forth above________________________

____

____

____

Actual construction work shall begin on or before______________________________ and shall thereafter be prosecuted with reasonable diligence, and if not so commenced and prosecuted this permit may be revoked.

The amount of water appropriated shall be limited to the amount which can be applied to beneficial use and shall not exceed____________cubic feet per second, or its equivalent in case of rotation.

Said construction work shall be completed on or before________________________

____

Complete application of the water to the proposed use shall be made on or before

____

WITNESS our hands this_________day of__________________19____

____

____

____

State Water Commission.

FILE IN DUPLICATE

PERMIT NO.------------

APPLICATION FOR A PERMIT

TO APPROPRIATE UNAPPROPRIATED WATERS OF THE STATE OF CALIFORNIA

FOR MUNICIPAL PURPOSES.

I, --
(Name of Applicant)

of --------------------------------County of ------------------------------
(Post office)

State of----------------------------, do hereby make application for a permit to appropriate the following described public waters of the State of California, SUBJECT TO EXISTING RIGHTS:

If the applicant is a corporation, give date and place of incorporation----------

----

1. The source of the proposed appropriation is------------------------------
(Name of stream, lake, or other source)

located in---------------------County, tributary of-------------------------

2. The amount of water which the applicant intends to apply to beneficial use is

--cubic feet per second.
(One cubic foot per second equals 40 miner's inches)

3. The use to which the water is to be applied is---------------------------

----

4. The point of diversion is located-------------------------------------

----
(Give distance and bearing to section corner)

----

being within the--
(Give smallest legal subdivision not to exceed 40 acres)

of Sec.------Tp.------R.------, M., in the county of---------------------

5. The---------------------------to be-----------miles in length, terminating
(Main ditch, canal or pipe line)

in the---of Sec.------
(Smallest legal subdivision)

Tp.--------R.--------, M., the proposed location being shown throughout on the accompanying map.

6. The name of the ditch, canal or other works is----------------------------

----

DESCRIPTION OF WORKS.

Diversion works—

7. (*a*) Height of dam_________feet; length on top_________feet; length at bottom _________feet; material to be used and character of construction_________________
(Loose rock, concrete, masonry, rock and brush, timber crib, etc., wasteway over or around dam)
____

(*b*) Description of headgate____
(Timber, concrete, etc., number and size of openings)
____

NOTE.—In case of insufficient space for answers in form attach extra sheets.

Canal system—

8. Give dimensions at each point of canal where materially changed in size, stating miles from headgate:

(*a*) At headgate: Width on top (at water line)________feet; width on bottom ___________feet; depth of water __________feet; grade___________feet fall per one thousand feet.

(*b*) At_________miles from headgate. Width on top (at water line)_________ feet; width on bottom_________feet; depth of water_________feet; grade_________ feet fall per one thousand feet. (Attach sheet covering other changes.)

Storage reservoir—

9. The amount of water to be stored is______________acre-feet.

10. The location of the proposed reservoir will be in___________________________
(Give 40-acre subdivisions)
____
____
____

11. The dam will be located in____
(40-acre subdivisions)
Sec._________Tp._________R._________, M. It will be_________feet in height; length on top_________feet; length on bottom_________feet; width on top_________ feet; slope of front or water face________________ ; slope on back________________;
(Feet horizontal to 1 vertical) (Feet horizontal to 1 vertical)
height of dam above water line when full________________feet.

12. Character of construction of dam and the materials of which it is to be built
____
____

13. Estimated cost of proposed works, $____________________________________

14. Construction work will begin on or before__________________________________

15. Construction work will be completed on or before___________________________

16. The water will be completely applied to the proposed use on or before________

17. To supply the city of____________________, ______________________County, having a present population of_______________

18. Estimated future requirements of city in amount of water needed____________

____

____

____

____

19. It is understood and agreed that this application and the permit and license which may be granted hereunder shall be subject to all the conditions set forth in Section 20 of the Water Commission Act (Statutes 1913, Chapter 586). (Copy of this section appears on each application.)

____
(Name of Applicant)

____

____

Signed in the presence of us as witnesses:

1. ______________________________ ______________________________
(Name) (Address)

2. ______________________________ ______________________________
(Name) (Address)

STATE OF CALIFORNIA,
County of______________________ } ss.

This is to certify that we have examined the foregoing application, together with the accompanying maps and data, and return the same for correction or completion as follows:

____

____

____

In order to retain its priority, this application must be returned to the State Water Commission, with corrections, on or before_______________19____

WITNESS our hands this_________day of ________________19____

____

____

____
State Water Commission.

PERMIT No.___________

STATE OF CALIFORNIA,
County of_______________________ } ss.

This is to certify that we have examined the application of which the foregoing is a true and correct copy and do hereby grant the same, subject to VESTED RIGHTS and the following limitations and conditions, in addition to those enumerated in Section 20 (Statutes 1913, Chapter 586) set forth above_______________________

____

____

____

Actual construction work shall begin on or before_______________________________ and shall thereafter be prosecuted with reasonable diligence, and if not so commenced and prosecuted this permit may be revoked.

The amount of water appropriated shall be limited to the amount which can be applied to beneficial use and shall not exceed____________cubic feet per second, or its equivalent in case of rotation.

Said construction work shall be completed on or before_______________________

____

Complete application of the water to the proposed use shall be made on or before

____

WITNESS our hands this_________day of _________________19____

____

____

____

State Water Commission.

Form 7.

NOTICE SENT TO FOREST SUPERVISOR.

APPLICATION No.___________

____

Supervisor ____ Forest Reserve

____

____ California.

State Water Commission of California

Notice of Application to Appropriate Water.

NOTICE IS HEREBY GIVEN, That____

____

has applied to the State Water Commission of California, for a permit to appropriate for________________________________purposes_____________cubic feet per second (________miner's inches) of the waters of_____________tributary to____________ to be diverted at a point in the____ _____________________________of Section________, Tp. ________, Range ________, and to be used on land in____ Section_________, Tp.__________, Range_________.

STATE WATER COMMISSION.

By______________________________

Secretary

Dated:__________________, 19____

Are there any diversions on this stream, or stream to which it is tributary, below applicant's? If so, give name and post office address of user or users.

____

____

____

Remarks: ____

____

____

Approved:

________________________________ ________________________________

Forest Supervisor. Forest Ranger.

Form 8a.

NOTICE SENT TO POSTMASTER.

State Water Commission of California
Notice of Application to Appropriate Water.

NOTICE IS HEREBY GIVEN, That______________________________________
____, California,
has applied to the State Water Commission of California, for a permit to appropriate
for______________________________purposes,______________feet per______________
of the waters of____
____
tributary to_________________________to be diverted at_____________point____as
follows:___________ In the____
____
____
____
____
____
and to be used____
____
____
____
____
____
____
____
Irrigation will begin about____
and end about____ of each year.

Any person desiring to protest against the granting of such permit shall, within thirty days from date hereof, file with the State Water Commission, Call Building, San Francisco, a written protest, stating reasons therefor.

STATE WATER COMMISSION.
By______________________________
President.

Dated: San Francisco, California,
________________________, 19____

Form 9.

NOTICE FOR PUBLICATION.

(For over 3 cubic feet application.)

State Water Commission of California

Notice of Application to Appropriate Water.

NOTICE IS HEREBY GIVEN, That--

--, California,

has applied to the State Water Commission of California, for a permit to appropriate

for---------------------------purposes---------------------------cubic feet per

second of the waters of---------------------, tributary to----------------------,

to be diverted at a point in the--

----

and to be used--

Any person desiring to protest against the granting of such permit shall, within thirty days from date of last publication hereof, file with the State Water Commission, Call Building, San Francisco, a written protest, stating reasons therefor.

STATE WATER COMMISSION.

By--------------------------------

President.

Date of first publication--------------------------------

Date of last publication--------------------------------

STATE OF CALIFORNIA

PROOF OF APPROPRIATION OF WATER FOR IRRIGATION.

From ____
Name of natural water source.

Through ____
Name of ditch, flume, or pipe line.

____________________________________, the undersigned, being first duly sworn, deposes and says that the facts relative to the appropriation of water by ____are full and correct to the best of his knowledge and belief.

____
If proof is not made by claimant, deponent should state on this line by virtue of what authority he represents the claimant.

____

1. Name of claimant____
Address____________________________, County of__________________
State of__________________
2. The means of diversion employed____________________________________
Dam and ditch, pipe line, flume, etc.
3. The date of the survey of ditch, canal, or pipe line was__________________
4. The construction of the ditch or other works was begun__________________
and completed ____
5. The dimensions of the ditch or canal as originally constructed were: Width on bottom__________feet, width on top__________feet, depth__________feet, on a grade of__________feet per thousand feet.
6. The conduit has (has not) been enlarged.
NOTE.—If enlargement or extension of ditch was made, supply information under 7 and 8.
7. The work of enlargement of the ditch or canal was begun__________________
and completed____
8. The dimensions of the ditch or canal as enlarged are: Width on bottom________ feet, width on top_________feet, depth_________feet, on a grade of_________feet per thousand feet.
9. The claimant is (is not) an owner in the above-described conduit.
____
If claimant is an owner in the conduit, state interest held on this line.
10. The nature of the title to the land for which the water right is claimed is______
____
11. Crops of ____
have been grown upon the land irrigated.
12. The water has been used for irrigation from______________to______________
Day of month. Day of month.
of each year.

13. The water was first used for irrigation by claimant or__________grantors in the year__________when__________acres were irrigated in the__________of Sec.__________, T.__________, R.__________, ____

____

____

14. The additional number of acres first irrigated in subsequent years was as follows:

________, ________acres in the____________of Sec.________, T.________, R.________
Year.

________, ________acres in the____________of Sec.________, T.________, R.________

________, ________acres in the____________of Sec.________, T.________, R.________

________, ________acres in the____________of Sec.________, T.________, R.________

________, ________acres in the____________of Sec.________, T.________, R.________

________, ________acres in the____________of Sec.________, T.________, R.________

________, ________acres in the____________of Sec.________, T.________, R.________

________, ________acres in the____________of Sec.________, T.________, R.________

________, ________acres in the____________of Sec.________, T.________, R.________

________, ________acres in the____________of Sec.________, T.________, R.________

________, ________acres in the____________of Sec.________, T.________, R.________

________, ________acres in the____________of Sec.________, T.________, R.________

________, ________acres in the____________of Sec.________, T.________, R.________

________, ________acres in the____________of Sec.________, T.________, R.________

________, ________acres in the____________of Sec.________, T.________, R.________

Remarks: ____
Append a sheet if necessary.

____

____

____

15. The maximum acreage irrigated in any year was________________________acres.

16. The water claimed has (has not) been used for irrigation each and every year
Strike out one not wanted.
since the right was initiated.

17. The years during which no water was used for irrigation or during which the full water right was not used were____
If water was not used, or used in reduced quantity at any time, full information as to causes and

____
duration of non-use should be given, appending a sheet if necessary

18. The claimant's water right was (was not) recorded in the office of the County Recorder of______________________County, said record being at page________of Book__________of________________________, and being a claim for____________ ______________of water for the irrigation of______________________________

acres of land in the following legal subdivisions:____________________________

____

____

____

____

____

____

NOTE.—Failure to record in the county in no way invalidates a water right, but if ditch or right was so recorded, supply full information under 19.

19. The map prepared by the State Water Commission is hereby accepted as correctly showing the ditch lines or irrigation works diverting or conveying the water claimed and the lands irrigated.

20. Water from the source given and through the works described is also used for the following purposes other than irrigation:

____

____

21. The character of the soil is____________________. The soil needs______acre-feet
Sandy, gravelly, loam.
per annum to properly irrigate the crops. A continuous flow of__________cubic feet of water per second, during the irrigation season of____________months, is needed to irrigate each 100 acres of land.

Remarks: ____

____

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____

____

____

Subscribed and sworn to before me this_________day of_______________, 19____

____

____

____

o

Second Annual Report

OF THE

Commission of Immigration and Housing

OF

California

January 2, 1916

Office of the Commission
Underwood Building, San Francisco

CALIFORNIA
STATE PRINTING OFFICE
1916

22325

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Mrs. Frank A. Gibson	Los Angeles
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OFFICE OF THE COMMISSION OF IMMIGRATION AND HOUSING
OF CALIFORNIA,

UNDERWOOD BUILDING,

SAN FRANCISCO, January 2, 1916.

To His Excellency, HIRAM W. JOHNSON,
Governor of California.

SIR: In compliance with section 13 of the act creating this Commission, we have the honor to submit herewith the Second Annual Report of this Commission.

Respectfully yours,

SIMON J. LUBIN, President.
EDWARD J. HANNA, Vice President.
MARY S. GIBSON.
J. H. MCBRIDE.
PAUL SCHARRENBERG, Secretary.
Commissioners.

INTRODUCTION.

The first annual report of the Commission was more or less explanatory and contained considerable discussion of immigration problems and of a constructive state immigration policy. This somewhat academic tone was inevitable in view of the fact that the report dealt with the first year's activities in a new field in which the work was not standardized and wherein practically no precedents had been established in the United States. The aim is to limit this second report to an account of actual accomplishments.

Experience has enabled the Commission during the past year to co-ordinate its work with that of other departments of the state and local governments. Consequently any possible duplication of effort has been eliminated and, in certain fields, more has been accomplished. In labor camp inspection, for example, arrangements were made with the Industrial Accident Commission and the Industrial Welfare Commission whereby their inspectors have acted as agents of this Commission in inspecting and reporting conditions in camps which they were required to visit in the course of their regular work. This, and similar arrangements, have avoided not only waste of effort and money for the State, but have protected both employers and employees from annoyance.

As the mechanism for performing the routine work has become more nearly perfected, it has been possible to place more emphasis upon the constructive features of the Commission's program. The amendments to the State Tenement House and Labor Camp Sanitation laws by the legislature of 1915 gave the Commission direct powers of enforcement which have made it possible to accomplish results in these fields with much less effort. Likewise the handling of the cases in the Complaint Bureau has become so well systematized that the Commission, in addition to settling the immigrants' individual complaints or difficulties, has been able to do much to bring them into contact with our social and economic life. This standardization of the work in these more established fields has resulted in the placing of more emphasis on education—which is, perhaps, the most constructive feature of any program for assimilating the immigrant population. An act draughted by the Commission and passed by the legislature of 1915 provides for home teachers who will reach the long-neglected immigrant mother; and, in conjunction with the State Board of Education, a campaign is being planned for the establishment of evening classes in English and citizenship. A manual or text has been published by the Commission for the use of home teachers, and a citizenship text is being prepared in co-operation with the State Board of Education.

The inception of this more constructive work has been made easier by the fact that the expected increase of immigration to California through the Panama Canal has been deterred by the continuation of the European war, and consequently the Commission has not yet had to deal with the new and difficult problems which would follow in the wake of such an increased immigration. Moreover, the war itself has awakened public interest and support in connection with any domestic immigration policy looking toward the assimilation of our already large immigrant population.

It is to be hoped that in California at least this public interest will survive the dramatic appeal of the war, for it is important to note that the decrease in immigration to California has not been in proportion to that of other states, or to that of the United States as a whole. This indicates the trend of immigration to the Pacific Coast and emphasizes the necessity for the work that the Commission is endeavoring to do—especially if the predicted influx of immigrants occurs after the end of the present war. Much that has been accomplished by the Commission has been due to the support and co-operation of that portion of the general public with which it has come in contact. While expressing its appreciation of this co-operation, the Commission would urge an even greater awakening of the public conscience with regard to the duties and obligations Americans must assume in connection with the millions of immigrants that are permitted and even invited to dwell here.

I.

LABOR CAMP INSPECTION.

The inspection of labor camps, in order to secure the enforcement of the labor camp sanitation law, has been established as one of the regular departments of the Commission's work. As was explained in last year's report, the enforcement of this law was originally entrusted to the State Board of Health; but this Commission assumed the task, with the consent of the Health Board. This was done after investigating the insanitary labor camp conditions in the Wheatland hop fields and elsewhere in the winter of 1914. The State Board of Health did not have a sufficient appropriation to handle the work, though the investigations had demonstrated the necessity for a systematic and regular statewide inspection. Up to August 8, 1915, the Commission worked under this delegated authority and sought to improve conditions merely through co-operation with the labor camp operators. On August 8, 1915, the amended labor camp sanitation law, which transfers the power of enforcement to this Commission, went into effect.

This Commission was charged with the enforcement of this law by the legislature of 1915 mainly for the reason that the statistics collected by the Commission up to January 1, 1915, disclosed the fact that over one-half of the inhabitants of labor camps are immigrants. This indicated that one phase of the problem of camp sanitation consists of raising and protecting the standard of living of immigrants. Moreover, since the work was organized and under way, the legislature deemed it more economical to have this Commission continue it, with the added legal power to enforce orders and with a working appropriation. Only $10,000 was appropriated, for the next two years, to carry on this work of inspecting and enforcing the law in over 1,000 camps scattered throughout the State; but, by practicing rigid ecomony, the Commission hopes to do effective work in most of the camps.

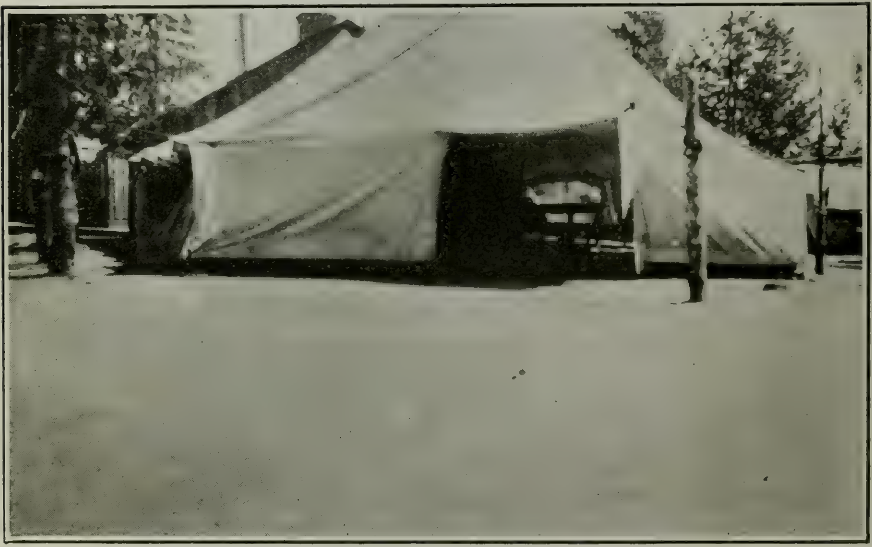
The Commission, though having acquired authority, has not changed its methods or procedure in this work, but still endeavors to bring about improvement through friendly co-operation with employers and employees. So far it has not been necessary to resort to the courts to secure compliance with the law, and threats of prosecution if improvements were not made within a fixed time have been few but effective. The fourth revised edition of the pamphlet on camp sanitation and housing (insert on page 41) is still advisory and educational in spirit. Several amendments to the labor camp sanitation law, drafted by the Commission and passed by the last legislature, have brought the minimum legal standard of living conditions practically up to that established in the advisory pamphlet, and the suggestions in the pamphlet have naturally, therefore, carried more weight. The detailed recommendations with reference to the construction of camp buildings and equipment have been followed more carefully, and as a result there are springing up in scattered localities model, sanitary camps, alike in almost every particular. This is evidenced by some of the accompanying pictures.

The fact that so many camp operators have complied with the law, without recourse to the courts, seems to confirm the belief expressed in the first annual report "* * * that employers or operators were willing to co-operate in the effort to improve the conditions of the men, but they did not know *how* to go about the work." But labor camps are being opened constantly by operators who have never conducted camps; consequently there is still much of a purely educational nature to be done in this field, and the task of keeping track of new camps is an endless one. Of course there are careless operators who, although they know the requirements and have had dealings with the Commission, overlook numerous details of sanitation every time they open a new camp. These operators comply with suggestions readily, but they require constant supervision and make regular and constant inspection necessary. For that matter, the Commission has found that the practice, so frequently followed in the enforcement of laws regarding sanitation, of not making inspections or reinspections until complaints are made, is entirely wrong. This practice is, of course, based on the theory that the employees, or any others affected, will report insanitary conditions to the proper authorities. But, as a matter of fact, the average employee is afraid of "losing his job" if he complains, and the casual outsider or neighbor who may be affected by insanitary conditions, is either ignorant of the danger or lacks the initiative to complain to the authorities. A few complaints against camps come to the office, but many of them are anonymous, and the localities are so scattered that the established routes of regular inspections and reinspections are followed—the complaints being investigated only incidentally.

Moreover, certain data from the reinspection reports, which are given in detail further on, disclose the regrettable fact that many of those who work and live in labor camps are seemingly more or less apathetic

Two views of a lumber camp which has been brought up to the Commission's standard rating of "Good." Note the orderly arrangement of the bunk houses and dining quarters—making it easier to keep the grounds clean.

concerning general sanitary conditions. Therefore, it is not only impossible to base inspections on complaints alone, but this lack of appreciation on the part of some employees makes more difficult the maintenance of good conditions. In several instances, such as the one illustrated in an accompanying picture, model sanitary equipment has rapidly deteriorated and the camps have become insanitary due to the carelessness of both the superintendent and the workmen in enforcing or following sanitary rules. To meet this problem the Commission is making a more positive effort to make operators and employees realize the necessity for co-operation in this work of sanitation. The placards containing the simple rules of sanitation, which were formerly sent only when requested, are now sent to all camps and also tacked up by the Commission's inspectors. Superintendents are asked to enforce these rules and to instruct the men that the rules must be followed, not only for their own protection but for the protection of the health of all the people in the State.

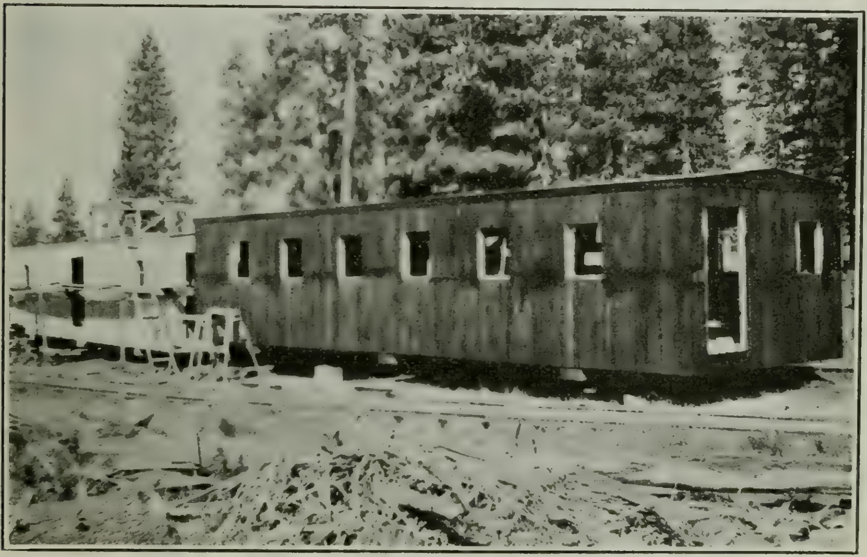


Open, unscreened dining tent with earth floor, used in a permanent lumber camp at the time of Commission's first inspection. (See picture on page 13.)

(A) INSPECTION ORGANIZATION.

There is no law requiring the registration of labor camps, and as a result much time is still lost in locating or ferreting out new camps. However, during this second summer of the work, it was possible to better organize the inspection and accomplish more with less expenditure. It was found that by using automobiles the inspectors could save both time and money. Though the Commission has had only one automobile, two inspectors constantly in the field (with the occasional assistance of a third) have been able to cover as much ground as was covered by five, and sometimes seven, inspectors during the first year. Another automobile has been purchased recently and in the future two men will be in the field while a third will handle the routing, correspondence and general camp sanitation problems.

During the past year it has not been necessary to employ a sanitary engineer in this department. The legislature of 1915 created a bureau of sanitary engineering under the State Board of Health. An arrangement has been made whereby that bureau handles all the technical sanitation problems formerly handled by the engineer employed by this Commission. That bureau has also co-operated most effectively with the Commission in a campaign against the pollution of streams and rivers by sewage and refuse from camps and towns. The camp inspectors frequently find that small, isolated villages dispose of all their refuse in streams in violation of a law which has been but rarely enforced in the past. These violations are now looked for and reported to the Bureau of Sanitary Engineering. The nuisances are not only abated by the latter department but sanitary methods of refuse disposal are also devised for these communities.



Dining wagons or cars, in course of construction, after inspection, to replace open tent shown in picture on page 12. (See picture, page 14.)

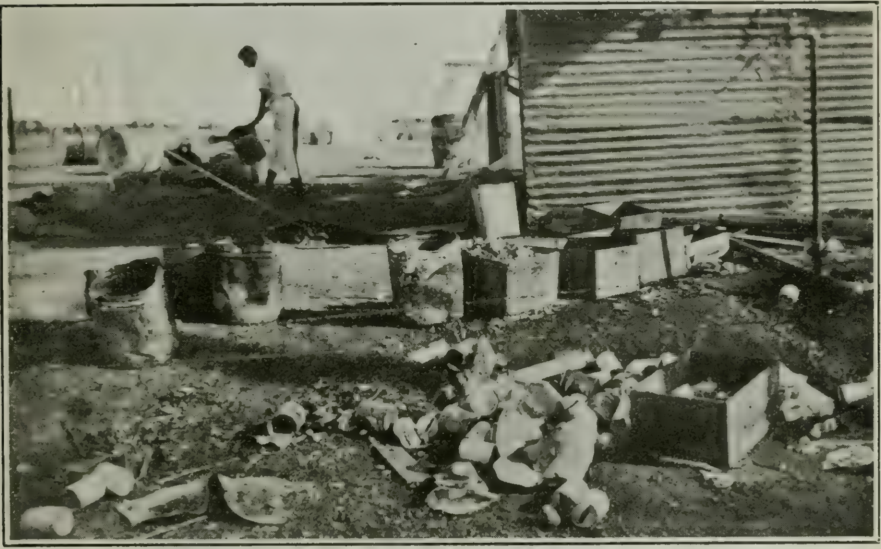
Co-operative arrangements have also been made with the Highway Commission and the Industrial Accident Commission which cut down the cost and also increase the efficiency of the camp department. The former commission has inserted a clause in all contracts for highway construction which requires that the labor camps in connection with the work shall be maintained according to the sanitary and housing regulations of the Commission of Immigration and Housing. This specific clause is easily enforcible and seems to carry more weight with contractors than the general, abstract camp sanitation law, though violation of the latter is a misdemeanor. The mining division of the safety department of the Industrial Accident Commission has also co-operated most generously in improving the housing and working conditions in the mines throughout the State. This is one of the safety measures of its work, which fits in with camp sanitation work. The inspectors of the mining division inspect each mine two or three times a year in the course of their regular work; so it was arranged during the summer that these inspectors should also send in housing and sanitation reports to this Commission. Letters, based on these reports, are sent to the mine operators, and reinspections are made by the Industrial Accident Commission inspectors. In this way it has been possible to reach isolated mining camps and to actually enforce the law by follow-up inspections in places which it would have been impossible for this Commission's small staff of inspectors to visit frequently—or at all. A similar co-operative arrangement has been carried out with the Industrial Welfare Commission in connection with labor camps at canneries.

Interior view of completed, screened dining wagon or car to replace open tent shown in the picture on page 12. (A tangible result of the Commission's work in labor camps.)

Much wasteful duplication is thus avoided and, moreover, the employers appreciate the fact that they have been spared the annoyance or interruption attendant upon double inspections.

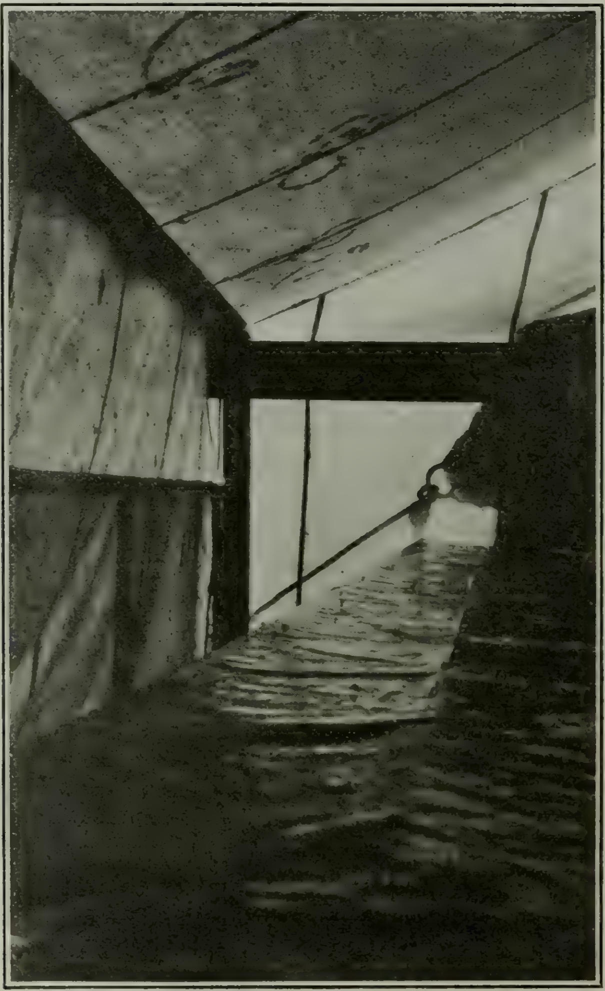
(B) CO-OPERATION OF PUBLIC.

Labor camps are so scattered and so far from the centers of population that it is difficult to arouse general interest in camp sanitation or to make the people realize that there is a very close connection between the public health problems of every community and the health problems of the some sixty or seventy thousand migratory workers in labor camps who dwell alternately in towns and camps. However, realizing that public support is necessary to secure both the enactment and the enforcement of sanitation laws, the Commission has carried on a consistent propaganda campaign in this field.



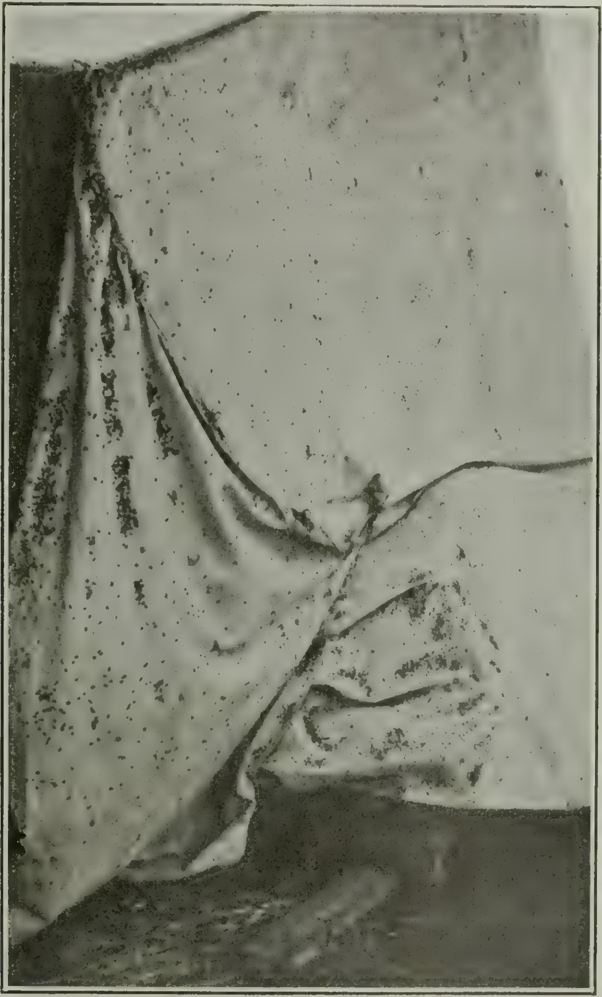
This picture shows the necessity for covered garbage cans, and screening. Open buckets and boxes are filled with garbage. The black dots on the cans and boxes are flies.

A fourteen panel exhibit has been compiled to show effectively the insanitary conditions which exist and to demonstrate the simple and practical ways in which conditions can be improved. Miniature frame models of sanitary camp equipment have also been made from the plans in the advisory pamphlet to further visualize the practicability of this work. Photographs of two of the panels are reproduced on pages 32 and 33 of this report. This exhibit was displayed at Sacramento during the session of the 1915 legislature, at conferences of health officers, and at immigration conferences in San Francisco, Oakland, and Los Angeles. Many people have thus been reached or appealed to. There was considerable popular support of the amendments to the labor camp sanitation law passed by the legislature, and many unrequested indorsements of the work and hundreds of requests for information have been received. Several universities have listed the camp sanitation pamphlet for required reading in courses on sanitation, and in a recently organized course in industrial hygiene at the State University this publication is being used as one of the texts.



Another argument for screening! The black dots on the dining table and on the canvas are flies—most of which were bred in manure piles in the camp.

In order to emphasize the importance of this work, and as one of the best means of convincing people generally of the wisdom and necessity of continued effort and improvement, the following statements, regarding labor camp sanitation and the work of the Commission in this field, are printed. These statements should carry considerable weight with labor camp operators as, in most of them, it is pointed out that "it pays in dollars and cents" to maintain sanitary camps.

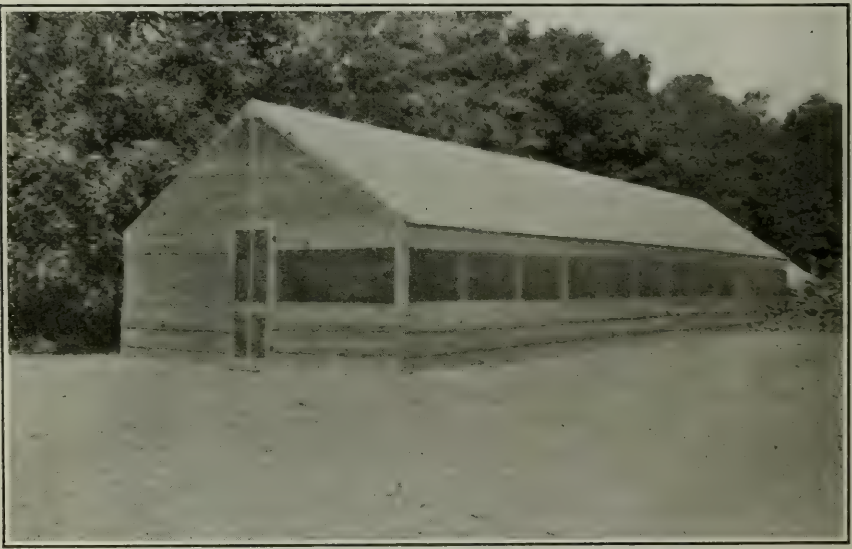


Fly-covered corner of a stable tent, around which manure had collected for weeks. This mass of flies represents a tremendous potential power for spreading typhoid and other diseases. If the manure had been hauled away regularly there would have been few or no flies.

I.

Governor Hiram W. Johnson, in his message to the legislature in 1915 said, with reference to the work of this Commission:

"In one direction alone it has accomplished results that, had it done nothing else, would have justified its creation, and justified many times its expenditures. The labor camps of the State of California were in many instances unfit for human habitation. The Commission on Immigration and Housing undertook a systematic inspection of these camps. Hundreds of them it has cleaned up and rendered sanitary. For more than 60,000 human beings the Commission has provided better and more sanitary places in which to live, and for this great work, so well performed, the Commission has the thanks not only of those who were unable to aid themselves and have benefited, but of the State at large."



Protection against flies. A semi-permanent, screened dining tent and kitchen combined. Built from plans in the Commission's advisory pamphlet (opposite page 40).

II.

The following are extracts from an article entitled "Happy Homes for Ranch Helpers in Our Land," which appeared in the *Los Angeles Daily Times* on January 1, 1916:

"An impetus was given to this general movement by the State Commission of Immigration and Housing, which has not been content merely to investigate conditions, but has done a most effective constructive service by providing to any ranch owner who applied to it definite plans for cheap and sanitary bunkhouses, dining rooms, toilet facilities and methods of garbage disposal.

"* * * 'Indeed, good accommodations pay in dollars and cents,' was Mr. G. H. Hecke's (Woodland) reply to the question. 'Look at my steady help. Even a number of migratory workers come year after year to report for harvest. * * *'

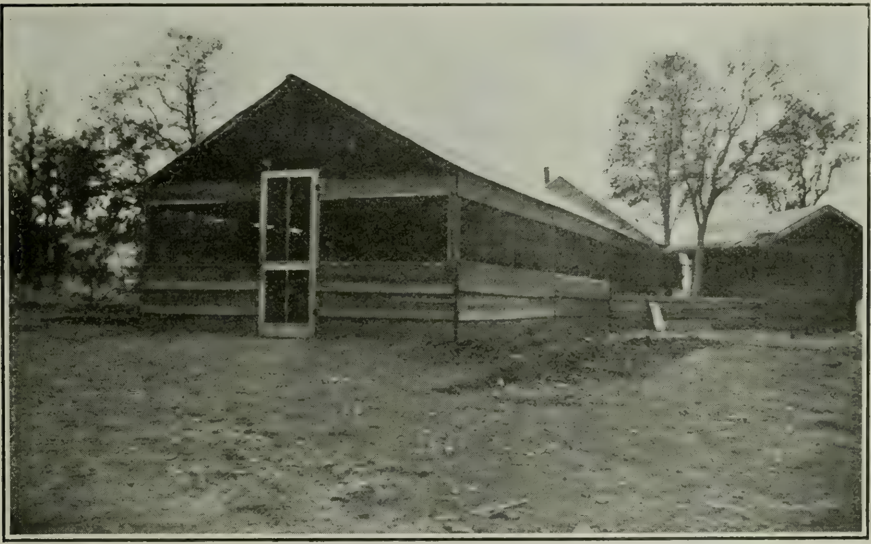
"According to C. C. Teague, vice president and general manager of this ranch (Limoneira), good housing for the helpers pays in dollars and cents.

" 'We get a better class of men,' says Mr. Teague. 'They stay longer and take more interest in their work.' " [And several more testimonials to the same effect are quoted in the article.]

III.

The Chanslor-Canfield Midway Oil Company, of Los Angeles, recently made the following statement:

"An insanitary labor camp is too risky for any employer of labor to maintain; it is not only a menace to himself, but may be of serious injury to others who can not help themselves. Outside entirely of the sentimental features, we believe 'it pays' to provide good, sanitary, and comfortable quarters for the men in our camps, and it is our experience that they quickly respond. While we may not be able to show a specific number of dollars saved each month in doing this, we are satisfied, from a selfish and also from a humanitarian standpoint, that the company is ahead by the transaction, and the men better satisfied."

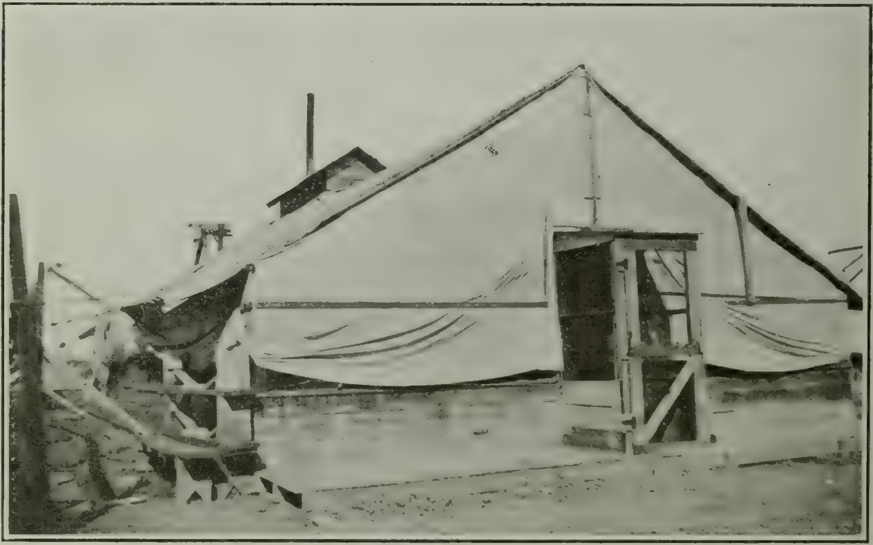


An orderly and efficient arrangement for connected dining room, kitchen, and commissary or meat house. Built from plans suggested by the Commission.

IV.

A communication from the McCloud River Lumber Company includes the following:

"Our experience in maintaining sanitary labor camps has been very satisfactory in every sense of the word. We find that while there is probably no saving in the cost of equipment, we are able to maintain a steadier and higher grade type of men than where camps are not sanitary."



An inexpensive, but effective, method for screening a dining tent in a temporary construction camp. Constructed by carpenter from plans in the Commission's advisory pamphlet (opposite page 40), with slight modifications.

V.

The E. Clemens Horst Co., hop growers, and operators of many labor camps, recently wrote the Commission:

"There is no doubt in our minds but that the efficiency, health, and good spirit of ranch employees is considerably increased by the maintenance of model camps. From our experience we are convinced that it is a good investment on the part of the employer to maintain proper living conditions for the ranch laborers.

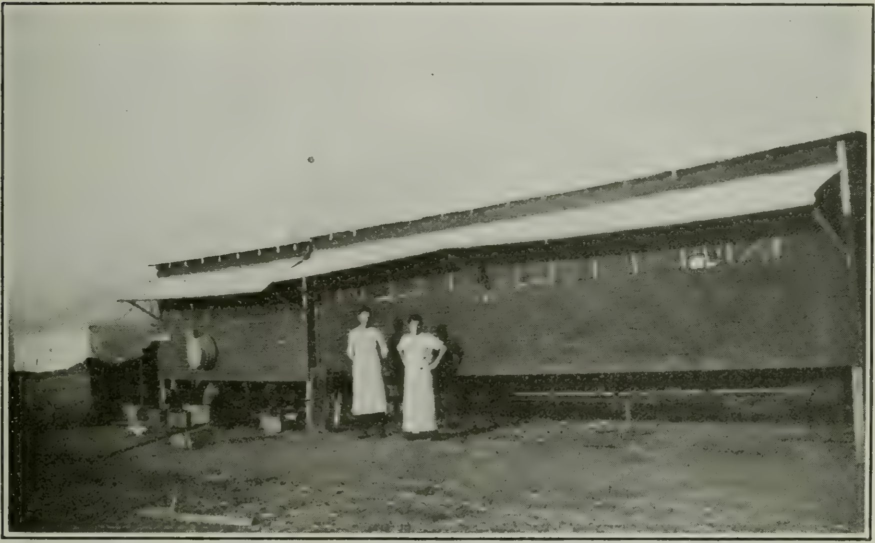
"We beg to assure you of our hearty co-operation in any state-wide plans for further improvements."

VI.

The following statement was made by Mr. W. G. Stimmel with reference to certain improvements in housing and sanitation made on the ranch of Leland Stanford Junior University near Vina, California, while he was manager there:

"These improvements, while simple and inexpensive, paid a larger dividend in money in proportion to cost than almost any other improvement made during the same period.

"The enemies to be met were the mosquito and the fly, and by thorough screening of the kitchens, outhouses and sleeping quarters, and the free use of lime in garbage pits, and the like, we were able to reduce the number of cases of malaria by a very large per cent, and to practically entirely eliminate intestinal diseases. Before the inauguration of these improvements, it was difficult, in the haying season, to keep full crews at work. For the past two years the volume of work done on this property was greatly increased and little difficulty was experienced in keeping the men well and in condition to perform their duties and crews were full-handed at all times."



A more or less permanent dining room and kitchen on wheels, built in accordance with Commission's suggestions. Well screened and ventilated.

VII.

The following is rather a remarkable tribute to California, made in a letter to the Commission from Mr. Frederick L. Hoffman, author of several books on social and economic problems, and noted sociological expert and worker. Mr. Hoffman spent several weeks in the lumber and construction camps of northern California last summer and made a thorough study of conditions—particularly of the system and methods employed by this Commission. After returning to the East Mr. Hoffman sent the following formal communication or report concerning his investigations:

"My general conclusions regarding the work of the Commission of Immigration and Housing were distinctly favorable. I was gratified to observe in my personal inspection of camps throughout northern California that a decided improvement in camp conditions has been secured, through the hearty and intelligent co-operation of large employers of labor with the officials of the Commission. What has been done in this respect in California should be followed without needless delay in other states. Conditions at labor or construction camps are, as a rule, throughout the country, unsatisfactory. No other state has made progress in this respect comparable with California. The model plans, rules and regulations promulgated by your Commission are admirable and deserving of nation-wide consideration.

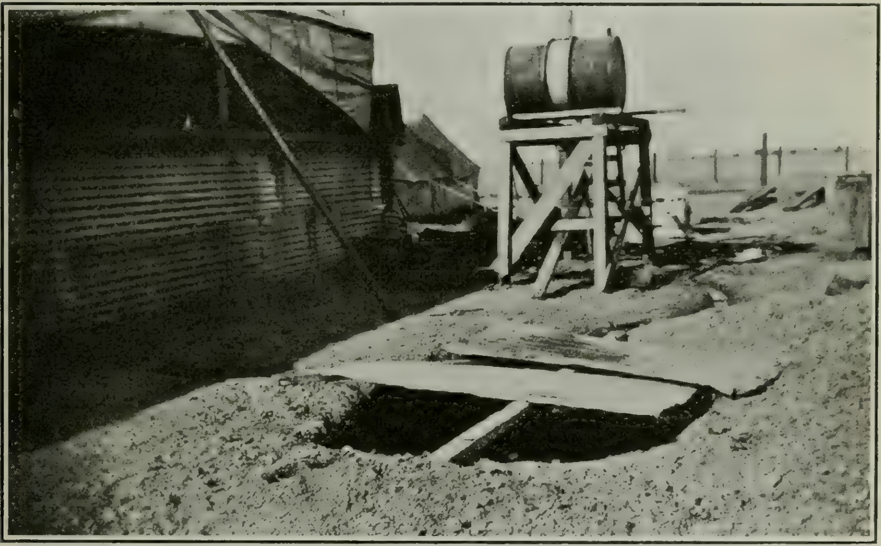
A permanent labor camp dining room, built in accordance with the Commission's suggestions. Well screened and well ventilated at a slight additional cost.

"The men who are employed in the woods, or in construction work, or in seasonal fruit gathering, are entitled to be housed and cared for in conformity to modern sanitary requirements. What is done for them as a matter of justice is, however, certain to benefit in the long run the community as a whole. Proportionate to the results achieved, the expenses incurred must be considered reasonable. Your success is primarily to be attributed to the careful selection of your official staff. I am sure that my views are shared by the large employers of labor, and the large body of employees, who are much more familiar with the facts. It is sincerely to be hoped that other states will follow California in the adoption of corresponding methods of labor and construction camp supervision and control."

(C) DISCUSSION OF STATISTICS.

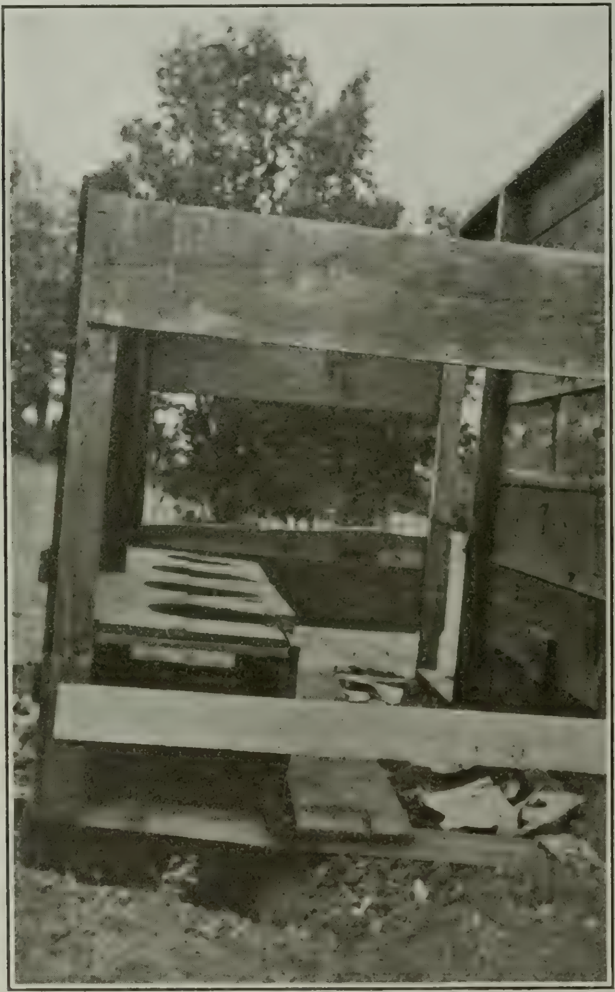
I. GENERAL.

The statistical tables beginning at page 335 are divided into two groups. The four tables in Group I cover 107 camps inspected between November 1, 1914, and July 1, 1915. Group II includes 663 camps inspected between July 1, 1915, and January 1, 1916. This group classification is necessary because, since the beginning of the fiscal year, on July 1, 1915, different and more detailed information has been collected on the reports of the camp inspectors. The legislature did not definitely decide to transfer the enforcement of the labor camp sanitation law to this Commission until May, 1915, so it was decided not to enlarge the work or change the form of inspectors' reports until the end of the fiscal year. Consequently the tables in Group I simply continue and add to the tables printed in the last annual report. Only a comparatively small number of camps was inspected during this first half of the year because the available funds were not large, and because it was not certain that the legislature would approve of this Commission's continuing the work. Since the number of camps covered in Group I is not large, the facts brought out in the tables are not here enlarged upon or discussed.



A screened kitchen and dining tent—*but* millions of flies breed and feed in the open cess-pool! A case where "the ounce of prevention," or a fly-tight cover, should have been used.

Referring to all statistics collected since the work of labor camp inspection began, on April 10, 1914, it is interesting to note the following general facts: A total of 1,992 inspections and reports have been made, and 346 of these were reinspections made within a year from the time of the first inspection. (Any second inspection of a camp not made within a year after the first inspection is not classed as a reinspection.) Temporary camps are constantly opening and closing, so it is not possible to say how many camps are actually operating at any one time, but a safe estimate from the information so far gathered



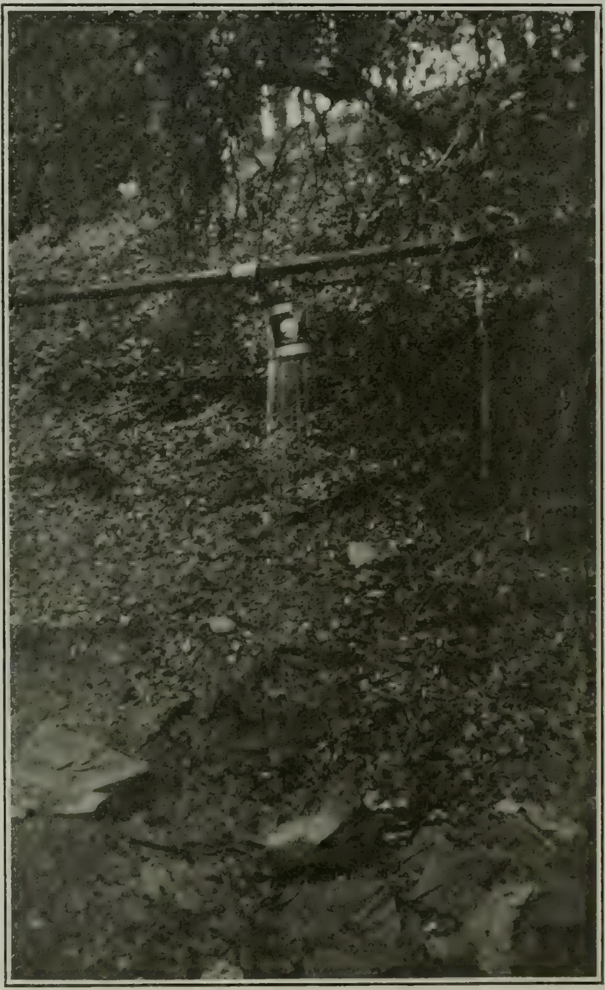
The filthy and fly-infested remains of a model, sanitary toilet. The boards were knocked off and used for firewood. Illustrates importance of regular inspection to require sanitary maintenance as well as construction.

would fix the number between 1,000 and 1,500, excluding labor forces on ranches and farms. A careful estimate shows that 1,400 different camps have been inspected. The total population shown in the tables of first inspections is 82,240. Of course there are many duplications in this total, because men are shifting from one temporary camp to another and many camps have been twice visited since April 10, 1914; but, counting the camps which have not been inspected, a very conservative estimate of the total number of people living in labor camps, during all or most of the year, is 75,000 (exclusive of farm laborers).

Drinking water protected from contamination by covered tank with only a faucet opening. Temporary and constantly moving labor camp.

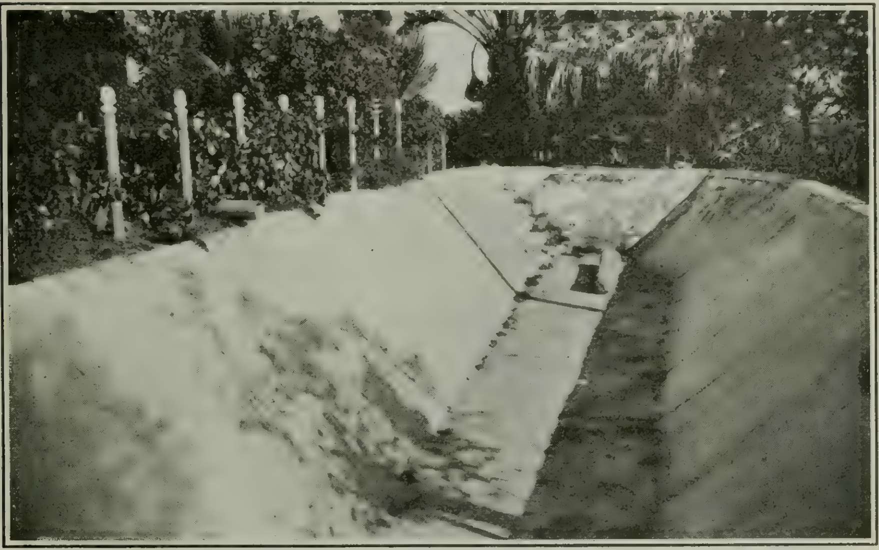
(a) Tables in Group II.

It will be noticed that the tables in this group cover a much wider field than those in Group I or those in last year's report. The report blanks used by the inspectors since July 1, 1915, were prepared with the aim of gathering important data not alone concerning sanitary conditions but also concerning the economic, sociological, and educational situation, as affecting both foreign and native-born residents in labor camps. Extreme care was exercised to have the inspectors get both uniform and accurate data on all points. Of course, reliance for much information had to be placed on the statements of superintendents and foremen, as a personal canvas of the entire crew in every camp was impossible, for in most instances the work is at some distance from the camp and the laborers are scattered. However, where inspectors had the least doubt concerning any information obtained, they were instructed to report "no data," so it is felt that the statistics here compiled are practically accurate.



A tomato-can shower bath in a dusty road construction camp—in a secluded creek bed—used daily by laborers. Wherever water is accessible such an improvised shower can be easily installed.

Table I, page 347, shows the make-up of the labor camp population. It is interesting to note that the total number of residents in these 663 camps (40,441) is greater than that in the 876 camps reported on in last year's report (36,846). This is due to the fact that more of the larger and more permanent camps, such as mines, were inspected this year, and practically all camps were operating at full capacity when inspected. The presence of 4,596 women and 4,064 children, together constituting about 21 per cent of the total camp population, proves that labor camp sanitation is not alone for the benefit of roving, migratory male workers. Women resided in 380 different camps, and were employed in 196 camps—1,769 in hop picking and fruit canning, the remainder in the beet fields, or as cooks and waitresses in various camps.



An ideal bathing pool built for laborers on a large ranch. A thing that "pays big returns"—according to both the owner and the men.

Only 9,405 laborers were skilled, 24,258 being unskilled. No reliable data on this point was obtainable in 36 camps. In connection with the data on wages in Table X, page 380, these figures have great significance. Over 70 per cent of the skilled workers were employed in oil, lumber and mining camps, so, if these three groups were eliminated, only 9 per cent of the remaining laborers were skilled.

Of the 36,264 adult laborers employed, 6,948 were married—approximately 19 per cent—and 3,376 of these were skilled. In other words, 35.8 per cent of the skilled workers were married, while only 14.7 per cent of the unskilled were married. It is also interesting to note that in the more permanent oil camps 40.5 per cent of the laborers were married, while in the beet, grape, highway and grading, railroad, and ranch camps, less than 10 per cent were married.

Table II, page 349, indicates the general sanitary condition of the camps, according to the rating of the Commission. In comparing this table with Table II in last year's report, it must be noted that the standards applied in the rating this year are much higher than last. For instance, this year detailed reports have been added on garbage disposal, on four new details of toilets, on cesspools, kitchen drains, and some nine other details. Moreover, the law has been amended to cover some seven additional features, so the standards this year are approximately 12 or 15 per cent higher. By applying last year's standards to the camps inspected this year, it has been rather carefully estimated that 46 per cent of the camps would be classed as "good," 35 per cent as "fair," and 19 per cent as "bad." This shows a rather gratifying increase of 12.1 per cent in the percentage of "good" camps as compared with the total of last year, and a decrease of 11 per cent in the camps listed as "bad." Even according to the much more strict rating this year there is an increase of 4.4 per cent in the number of "good" camps.

A pile of garbage, manure and refuse in a permanent railroad camp in a suburb of a large city. Shows connection between labor camp sanitation and general health conditions—even in cities.

Another encouraging feature of Table II, page 349, is the fact that 51.3 per cent of the laborers (based on camp capacity) were housed in "good" camps, as compared with only 35.5 per cent shown in last year's report. This fact indicates that, as a class, the operators of the larger camps are responding to the efforts of the Commission and are coming to recognize the advantages of model equipment.

With reference to Table III, page 350, it is to be regretted that bathing facilities were available in only 420 of the 663 camps. The legislature would not amend the law so as to specifically require bathing facilities, so it seems to be difficult to persuade the operators to provide them. As proof that the workers appreciate this feature it was found that in only two out of 420 camps, where bathing facilities were available, did the men use the facilities less frequently than once a week. In 208 camps the men used the baths daily; in 56, at least twice a week; in 123, weekly—with no data from 31 camps. These figures should refute the time-honored argument that labor camp workers will not use baths and, therefore, employers should not be required to furnish them.

The Mexican labor camp problem in Southern California. Crowded, dirty sleeping quarters; uncovered garbage cans, and open sewage drain in foreground.

Although Table III, page 354, shows that no toilets were provided in 52 camps, this is a marked improvement over last year, when in 114 out of 876 camps none were provided. Likewise, 159 filthy toilets were found as compared with 364 last year. Model sanitary toilets were found in 267 camps, and in 80 camps, flush toilets were provided.

There were 187 violations of the section of the law which requires that all openings in the kitchens and dining quarters be screened, but last year 305 such instances were reported in 876 camps. There seems to be as much or more difficulty in enforcing the law with reference to garbage containers in camps as in cities or towns. No containers were used in 108 camps. In 211 camps no covers were kept on containers, and in 136 camps garbage was disposed of in an entirely insanitary manner.

In 94 camps, kitchen waste water and garbage was thrown into running streams in violation of the general health laws. These violations were reported to the State Board of Health. In 205 camps no provision was made for disposal of kitchen drainage and, as a result, the ground near the kitchens was wet and fly-infested.

No precautions were taken in 233 of the 430 camps with stables, to prevent flies breeding in manure piles.

The legislature also refused to pass a specific amendment to strengthen the law in this respect, but it would seem that compulsion is necessary.

A short step in the right direction—sanitary toilet built from Commission's pamphlet plans, in Mexican railroad camp. But note dilapidated huts used as family dwellings.

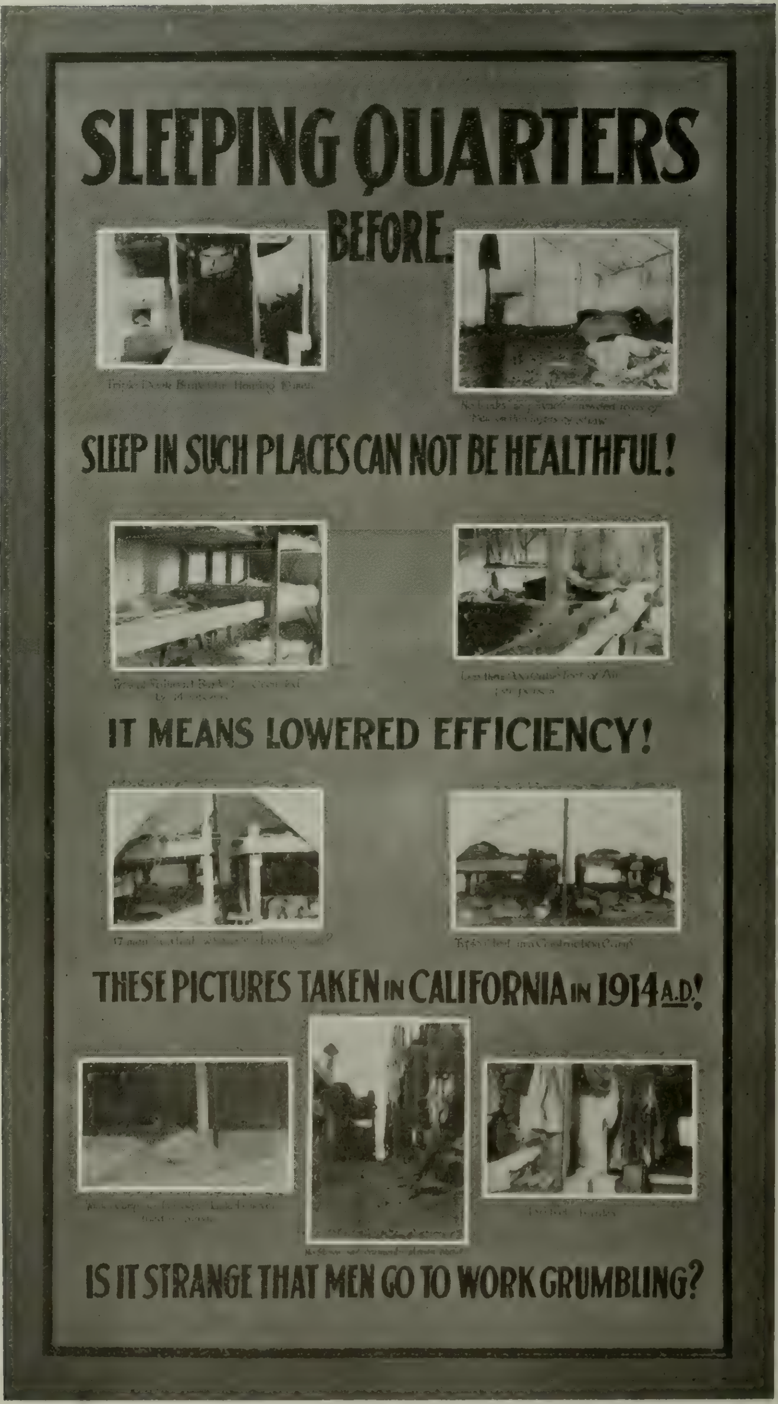
Much publicity has been given to the fly evil and practically all camp operators know that flies are mostly bred in manure piles, yet only 45 per cent of the operators of camps with stables, dispose of manure regularly and satisfactorily.

The general conditions of sleeping quarters as shown in Table III, page 360, are not so good as they should be. This may be due to the very vague clause of the law with regard to this feature. At any rate 22 per cent of the camps failed to keep the sleeping quarters, in every particular, up to the standard set by the Commission. In 34 per cent of the camps there were no floors in the bunk houses or tents. In wet weather, this lack of wooden floors makes conditions unhealthful as well as uncomfortable. Moreover, in ten camps no bunks were furnished and the men were required to sleep on the ground. It is encouraging, however, to note that 71.9 per cent of all bunks were entirely sanitary—40.8 per cent being steel bunks; 22.5, wooden; 8.6, both steel and wood.

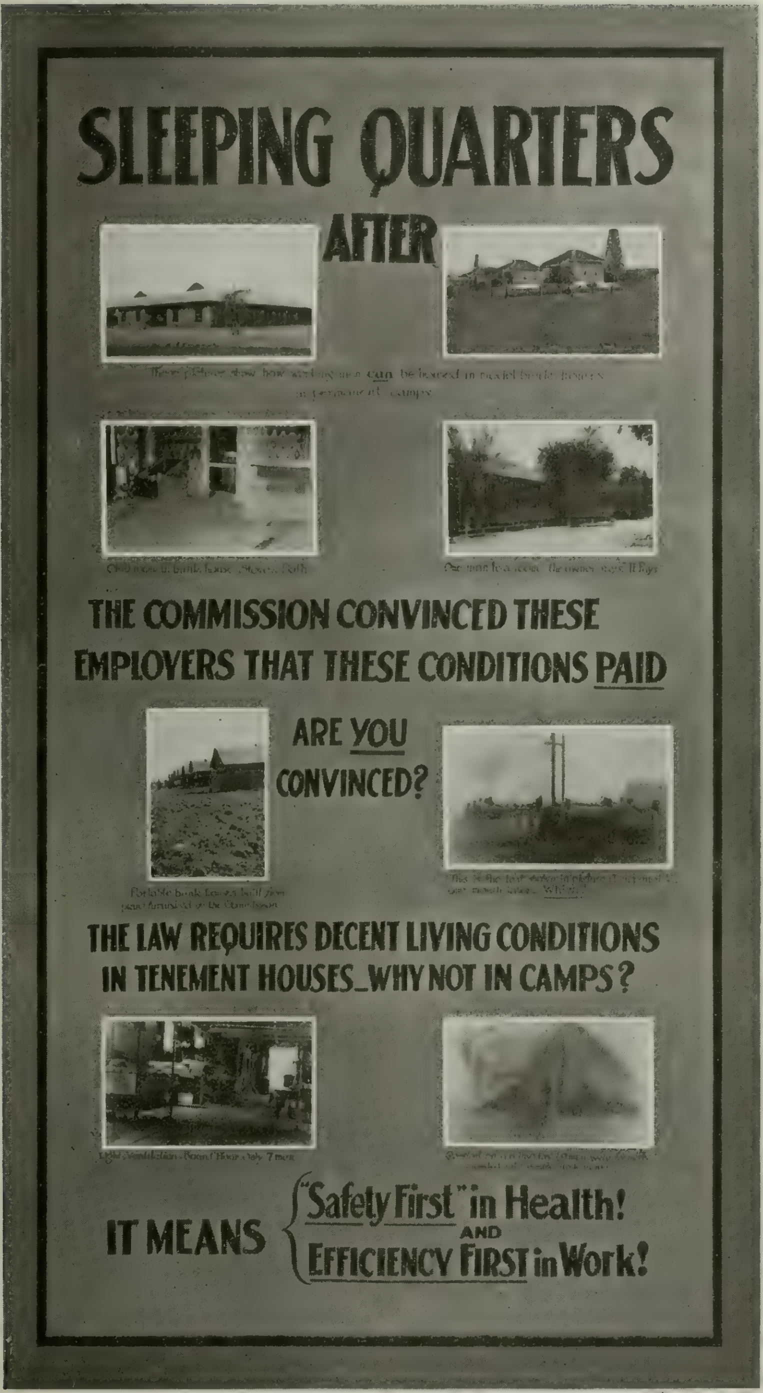
The tables dealing with things other than sanitary conditions also disclose facts of great interest. Table IV, page 366, shows what a great bearing labor camp sanitation work has on raising or protecting the living standards of immigrants, and this table also indicates the size of the problem of immigrant assimilation in the State. Over 40 different nationalities were represented and 45.7 per cent of the total population (or the 37,515, concerning whom information on this point was obtainable) of the camps were foreign born. It is noteworthy that the south European and Mexican immigrants totalled 10,751, or 62.7 per cent of all immigrants in the 663 camps. The 2,816 persons from Oriental countries were divided as follows: 1,786 Japanese, 643 Chinese, 387 East Indians.

It is disappointing to note in Table V, page 368, that there were only 1,786 naturalized foreign-born, or 10.4 per cent of the immigrant population. These figures are not absolutely accurate, as it was impossible to obtain data from every individual, but it is certain that less than 15 per cent of these immigrants have become citizens. This fact indicates the grave need for an ''Americanization'' movement or citizenship education, as discussed in the chapter on education, page 135. It is interesting to note that the percentage of naturalized immigrants runs highest in permanent camps. Permanency of work permits the acquisition of the necessary residence, and the generally better conditions an dsteadier employment seem to make for better citizenship—so it is to be hoped that the rapid ''turn-over'' in labor, shown in Table XVII, page 391, may be decreased.

Table VI, page 369, indicates the extent of the padrone or ''boss control'' system with reference to immigrants. It is difficult to obtain evidence of this practice, but in these 62 instances it was definitely proved. This system seriously interferes with assimilation or Americanization, for the immigrant is not only kept from Americanizing influences, but often the better standards of his own race are denied him. The padrone or leader, collects newly arrived countrymen and ''farms them out'' by groups. These immigrants live in isolation for months, and even years, at a time, seldom hearing English spoken, and depending entirely on the leader for money, food, and work. This is particularly true of East Indian and Japanese immigrants, and it is noteworthy that nearly half of the instances of this system were in beet camps. The small number of padrones listed as East Indian is due to the fact that the workers are afraid to tell the inspectors of the system, and the employers are equally loath to admit it.


SLEEPING QUARTERS
BEFORE.
SLEEP IN SUCH PLACES CAN NOT BE HEALTHFUL!
IT MEANS LOWERED EFFICIENCY!
THESE PICTURES TAKEN IN CALIFORNIA IN 1914 A.D.!
IS IT STRANGE THAT MEN GO TO WORK GRUMBLING?

Reproduction of one of fourteen large panels used by the Commission as an educational exhibit in housing and sanitation. Shows conditions found when labor camp inspection was first begun. Panel on opposite page shows conditions improved as a result of Commission's constructive suggestions and orders.



SLEEPING QUARTERS

AFTER

THE COMMISSION CONVINCED THESE EMPLOYERS THAT THESE CONDITIONS PAID

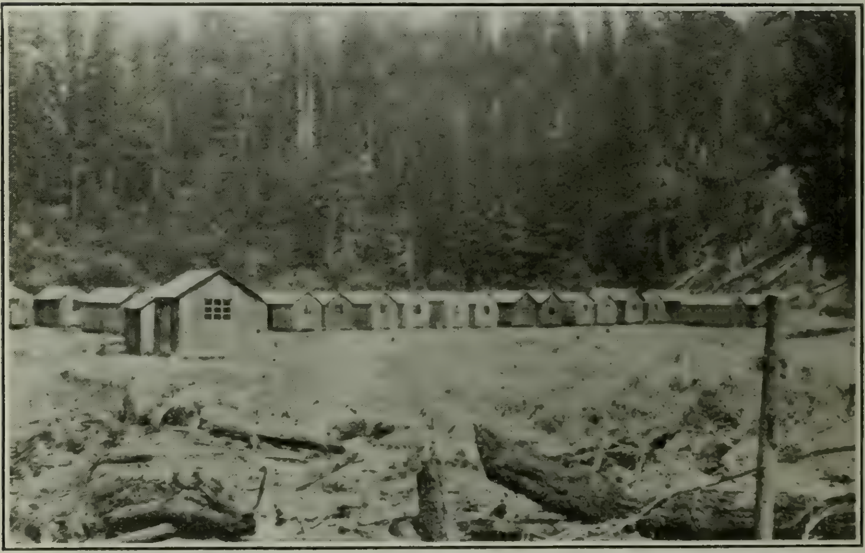
ARE YOU CONVINCED?

THE LAW REQUIRES DECENT LIVING CONDITIONS IN TENEMENT HOUSES_WHY NOT IN CAMPS?

IT MEANS "Safety First" in Health! AND EFFICIENCY FIRST in Work!

Reproduction of one of fourteen panels used by the Commission as an educational exhibit in housing and sanitation. Shows that it is possible and practicable to house laborers in sanitary and attractive quarters. Panel on opposite page shows conditions in some of these same camps before Commission's sanitation campaign was undertaken.

In gathering the information tabulated in Table VII, page 370, it was found necessary to make two classifications. The first groups of figures in the table show the general attitude of employers as to whether they are actually unfavorable toward either native or foreign-born; the third group shows actual preferences for different nationalities. The answers or statements made are listed by camps. It can be seen at a glance in what industries any particular nationality is preferred. For instance, in 63 out of 92 agricultural camps foreign-born laborers were preferred, while in oil camps native-born Americans were preferred in all instances but one. In every railroad camp foreign-born laborers were preferred. In 195 camps, the superintendents expressed no preferences. In 214 instances native-born laborers were preferred, and in 198 foreign-born were preferred. In 74 camps no information on this point could be obtained.



Well lighted and well ventilated cabins in a newly established lumber camp. Whole camp laid out along model lines suggested in Commission's advisory pamphlet.

Tables VIII and IX, pages 372 and 376, show the actual low and high wages, respectively, paid in the labor camps inspected. Table X, page 380, gives the average low and the average high wage, with a general average based on both. These tables have an important bearing on the general standards of living which obtain among these seasonal or migratory workers. It must be borne in mind that the average high wage is received by skilled workers, and that approximately only 28 per cent of all camp labor is skilled. Therefore the average low wage of $2.21 applies among 72 per cent of the entire number of workers in labor camps.

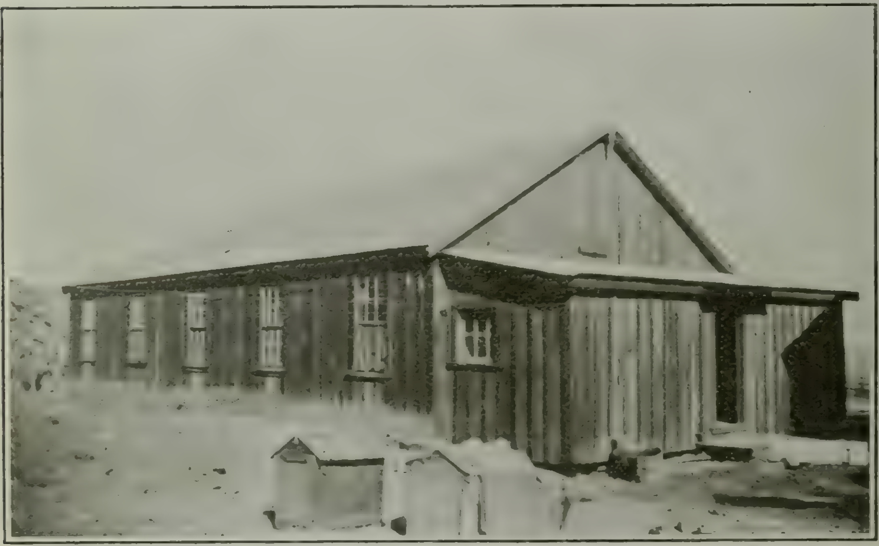
Moreover, Tables XI and XII, pages 381 and 383, showing the cost of board and lodging, throw further light on the average net earnings of the laborers. The average cost of board was approximately 70 cents a day. (In only 29 camps was there any charge for lodging.) Deducting this amount from the average wage of $2.21 the net earning or wage is $1.51 per day. It is significant that the lowest wages were paid in railroad and beet camps, which rank very low as to sanitation and living conditions, and the highest wages were paid in the oil camps, which rank high in this connection.

Table XIII, page 385, gives a summary of all the data which it was possible to collect on the question as to how many immigrants send money back to their native country. There were laborers in 150 camps who did so dispose of all or a portion of their earnings. In about 100 camps the approximate number of these immigrants was obtained and the total is 802. However, this data is acknowledgedly incomplete. It is interesting to note that many superintendents frankly stated that they did not think the laborers could save enough from their seasonal and irregular earnings to send anything "home."

Orderly and attractive permanent quarters for Mexican laborers at a cement plant. Contrast with Mexican labor camp quarters shown in pictures on pages 29 and 30.

Table XIV, page 386, as well as the following tables, also Table V, page 368, are of great importance with relation to the problem of the education of children and adult immigrant education, discussed in chapter III, page 138. It is significant that many of the permanent camps, in which there are many children, are located at a great distance from any school—for instance, 25 lumber camps were more than ten miles from a school. Of other camps, 43 were between five and ten miles from a school and 79 were between three and five miles. Table XV, page 388, shows that children of school age in 53 camps did not attend school, and in only five camps were there any classes for the instruction of either children or adults. These statistics indicate that under the present educational system many children do not receive prescribed instruction, and thousands of immigrants are cut off from any Americanizing or educational influences.

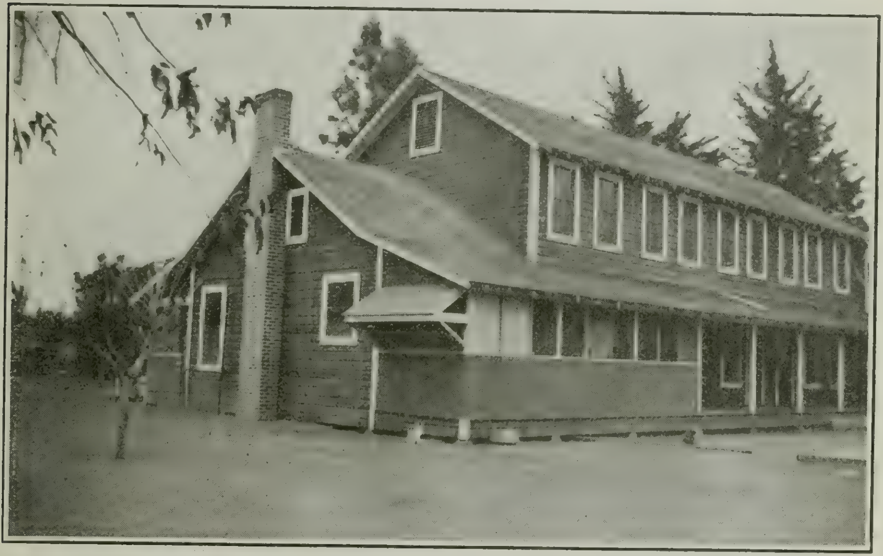
Table XV, page 388, also shows that illiterate immigrants were reported in 100 camps. It was most difficult to collect information on this subject. The test applied was the ability to read and write in some language, and in many instances the only fact by which an inspector could determine the point was the ability of immigrants to sign their names. A personal canvass of the entire working force was obviously impossible. The total of 942 illiterate immigrants must be regarded as an indication rather than an approximation. At least the figures are very conservative.



Well lighted and well ventilated bunk house, with connected shower and wash room in foreground.

Table XVI, page 390, likewise gives very low and conservative figures. Yet it is rather startling to notice that 4,371 adult immigrants were found who could speak no English. Of the 73 per cent who could speak some English, many could only speak enough to make themselves understood when seeking work or making purchases, and most of them could not read or write English. Perhaps there is even a more serious significance in the fact that 231 children of these foreign-born laborers could not speak the English language. This indicates that not even the second generation is being assimilated or Americanized in these isolated communities.

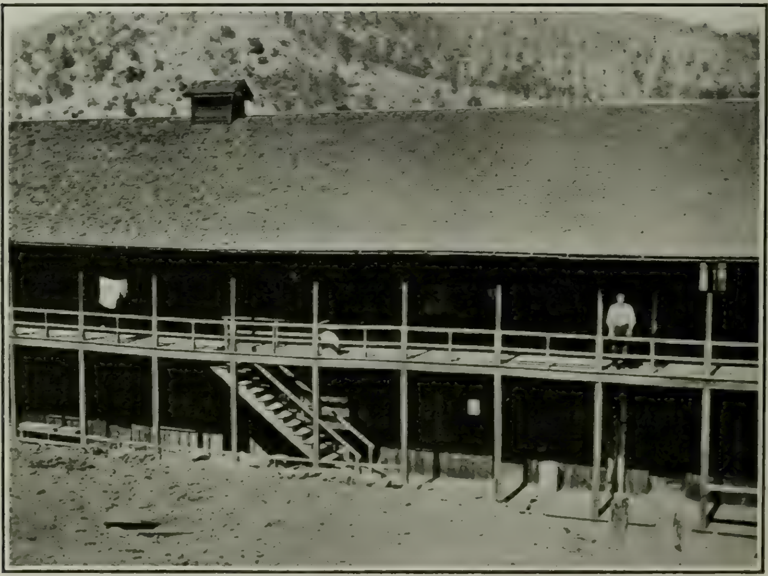
Table XVII, page 391, contains information concerning the rapid turn-over of labor—perhaps the most serious phase of the migratory labor problem in California. As is indicated in the headings of the table, the turn-over is indicated with reference to monthly periods, because many camps do not run for a full year. Thus the percentages shown are the percentages of the total working force that dropped out each month and had to be replaced each month. The percentages are extremely conservative because no data were recorded on this point unless the information was accurate, moreover, many foremen hesitate to give the total number of men that leave each month, because they seem to fear that fault will be found with them or that they will be suspected of splitting fees with employment agencies. In the railroad camps it is rather startling to note that 101.7 per cent of the working force dropped out each month and had to be replaced—in other words, to maintain a steady force of 783 men it was necessary to employ 796 different men each month, or approximately 9,500 different men during



Permanent bunk house for ranch laborers. All windows screened, and screened dining porch. Steady crews of workers remain on this ranch for years at a stretch—and the superintendent gives the credit to the living quarters.

the year. In highway and grading camps this percentage was 78; in construction camps, 45 per cent. Opposed to these extremes, only .48 per cent, or less than one half of one per cent, dropped out and had to be replaced each month, in the oil camps.

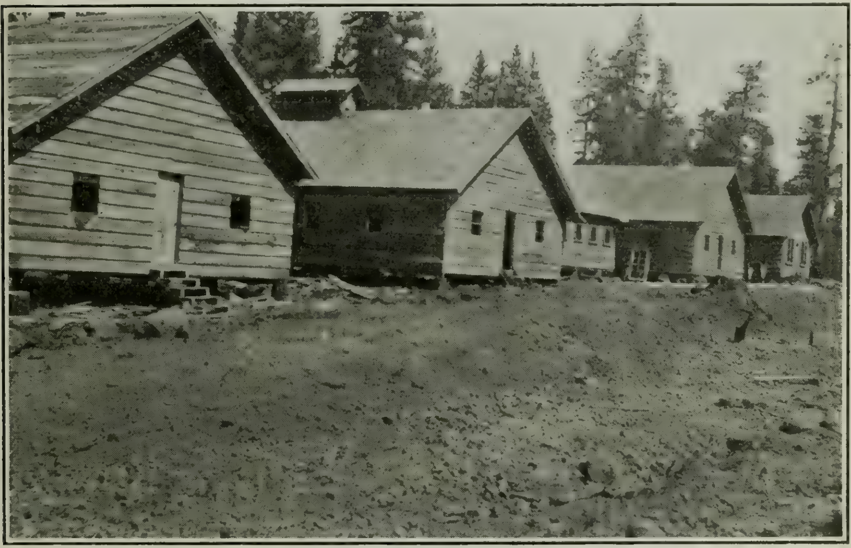
That the rapid labor turn-over noted above is not entirely due to the temporary character of the work is proved by the results noted in Table XVII, page 391, from beet and mining camps, for the work in these particular camps was largely of a continuous or permanent character. At any rate, there seems to be a rather clear connection between sanitation and permanency or steadiness of employment. That insanitary camps make for a rapid turn-over is evidenced by the following facts: Of the total working forces in beet camps, 33.7 per cent were housed in camps listed "bad," and the percentage of turn-over in beet camps was 33.1 per cent per month; 53.5 per cent of the working forces in highway and grading camps lived in "bad" camps, and the turn-over percentage was 78 per cent; 68 per cent of railroad workers were in "bad" camps, and the turn-over was 101.7 per cent. A detailed examination of the insanitary features in individual camps where there was a large turn-over, points to the same connection between camp conditions and turn-over.



Newly erected bunk house in permanent mining camp. Note rubbish cans provided as result of Commission's inspection.

Moreover it is noticeable that a low rate of wages prevailed in camps where there was a large turn-over, and this economic pressure may be a contributing cause. In the beet camps, referred to in the above paragraph, the unskilled laborer received a net return of $1.384 per day, in highway and grading $1.51, and in ranch camps $1.35.

Finally, the bearing of the seasonal character of the industries here represented on the habits of the workers must be mentioned as a factor in this turn-over problem. It is generally conceded that this irregularity of employment tends to produce a corresponding irregularity in the habits of the seasonal laborers. If greater regularity of employment could be brought about, by a scientific rotation of crops in agricultural industries, and in other ways, this cause for a wasteful labor turn-over could be largely eliminated.



Permanent bunk houses being erected in a lumber camp at time of second visit by the Commission's inspector. The old quarters had been overcrowded and poorly ventilated.

II. REINSPECTION.

Table XVIII, page 391, shows the results of reinspections in 118 camps between July 1, 1915, and January 1, 1916. It must again be noted that these were the second inspections made only between these dates, and that a visit to a camp which had already been inspected previous to July 1, 1915, was not classed as a reinspection. Comparatively few camps were reinspected because, as stated before in this chapter, the aim was to again cover a large field and do extensive educational work. The intensive work will begin during the coming season.

The results are encouraging—especially the fact that 72, or 62.1 per cent of the camps reinspected, had been brought entirely up to the minimum standard set by the Commission. Moreover, improvements had been made in 83, or 70.4 per cent of the camps, and only 18 camps had retrograded. Of the 118 camps reinspected, 71 had been classed as only ''fair'' or ''bad'' on first inspection, and reinspections were purposely made in territory where some of the worst camps were located. A more comprehensive view of what labor camp inspection has accomplished is to be found on pages 23 to 31, where the results of two years' work are discussed.

Advisory Pamphlet

on

Camp Sanitation and Housing

Commission of Immigration and Housing
of California

Underwood Building, 525 Market Street
San Francisco, Cal.

Commission of Immigration and Housing of California

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November, 1915.

Fourth Revised Edition.

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OF CALIFORNIA

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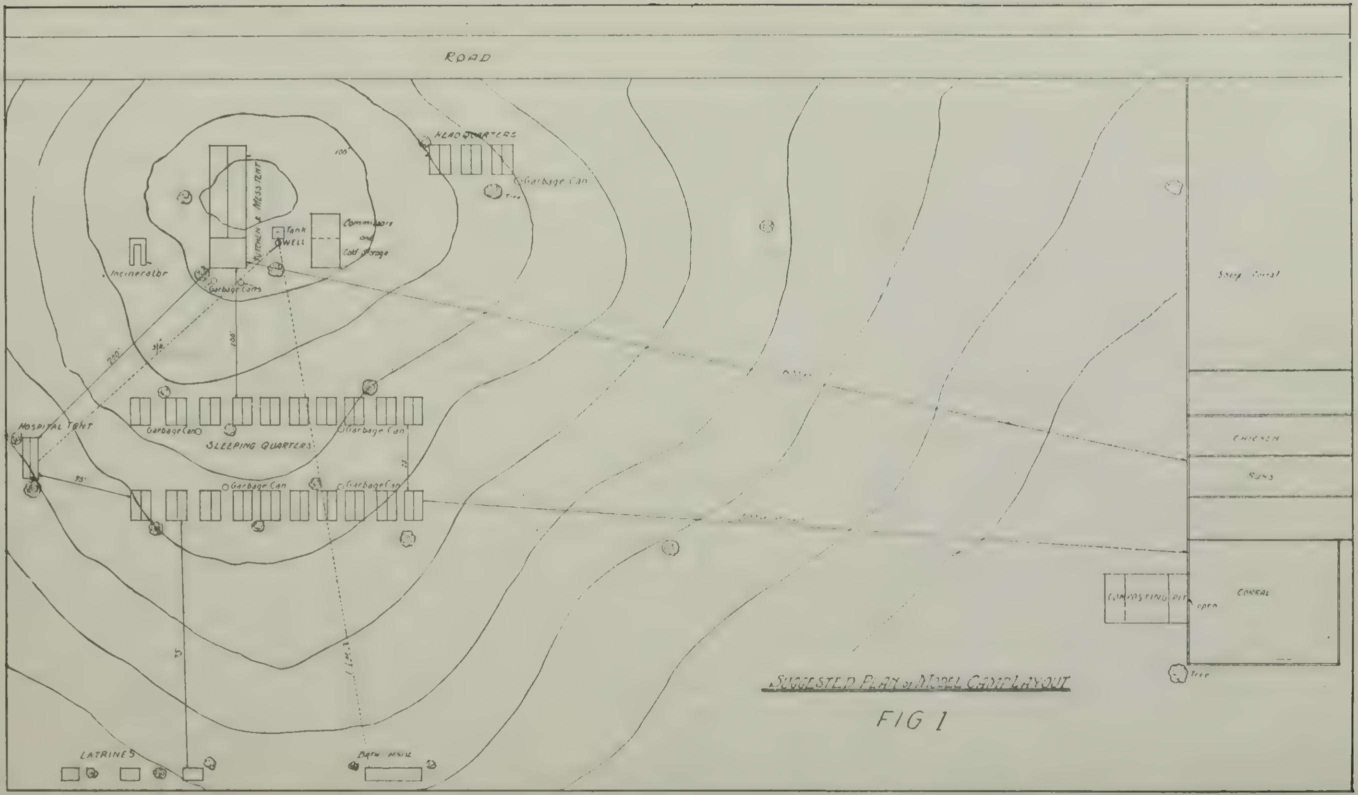


SUGGESTED PLAN of MODEL CAMP LAYOUT

FIG 1

A suggested layout for model camp, wherever natural situation permits. It is wise to choose high ground for sleeping quarters and dining-room. Toilets and baths should be at a convenient distance from tents. Corrals and animal enclosures should be at least 500 feet distant from living quarters.

TO OWNERS AND SUPERINTENDENTS OF LABOR CAMPS.

On August 3, 1913, a riot occurred on a hop ranch near Wheatland. The Commission of Immigration and Housing after a thorough investigation of the causes which led up to the riot, determined that probably the most important contributory factor was the poor housing and sanitary accommodations afforded the workers. Further investigation made it clear that the Wheatland hop ranch conditions were not exceptional, but that similar insanitary housing conditions prevail pretty generally throughout the labor camps in the State.

Our contact with the employers of labor made it clear to us that the undesirable sanitation was not the result of intentional carelessness but rather a relic of early California days when our people were good naturedly willing to put up with almost any housing conditions. Where we have suggested improvements in housing or sanitation, we have met with hearty cooperation on the part of every camp owner.

In our desire to be of the greatest possible help to the owner of the labor camp and to the man who must live in it, we have thought it wise to submit in the form of a pamphlet certain suggestions pertaining to the housing of men in camps. This pamphlet has been prepared under the direct supervision of the Chief Sanitary Engineer of the Commission, J. J. Rosenthal, who has received helpful suggestions from the following authorities:

Colonel R. G. Ebert, Department Surgeon, Western Department, United States Army.

W. A. Sawyer, M. D., Director of the Hygienic Laboratory of the California State Board of Health.

William B. Herms, Assistant Professor of Parasitology, University of California, and Officer in charge of Malaria Investigations, California State Board of Health.

Dr. George W. Shaw, Consulting Agriculturist and Land Expert.

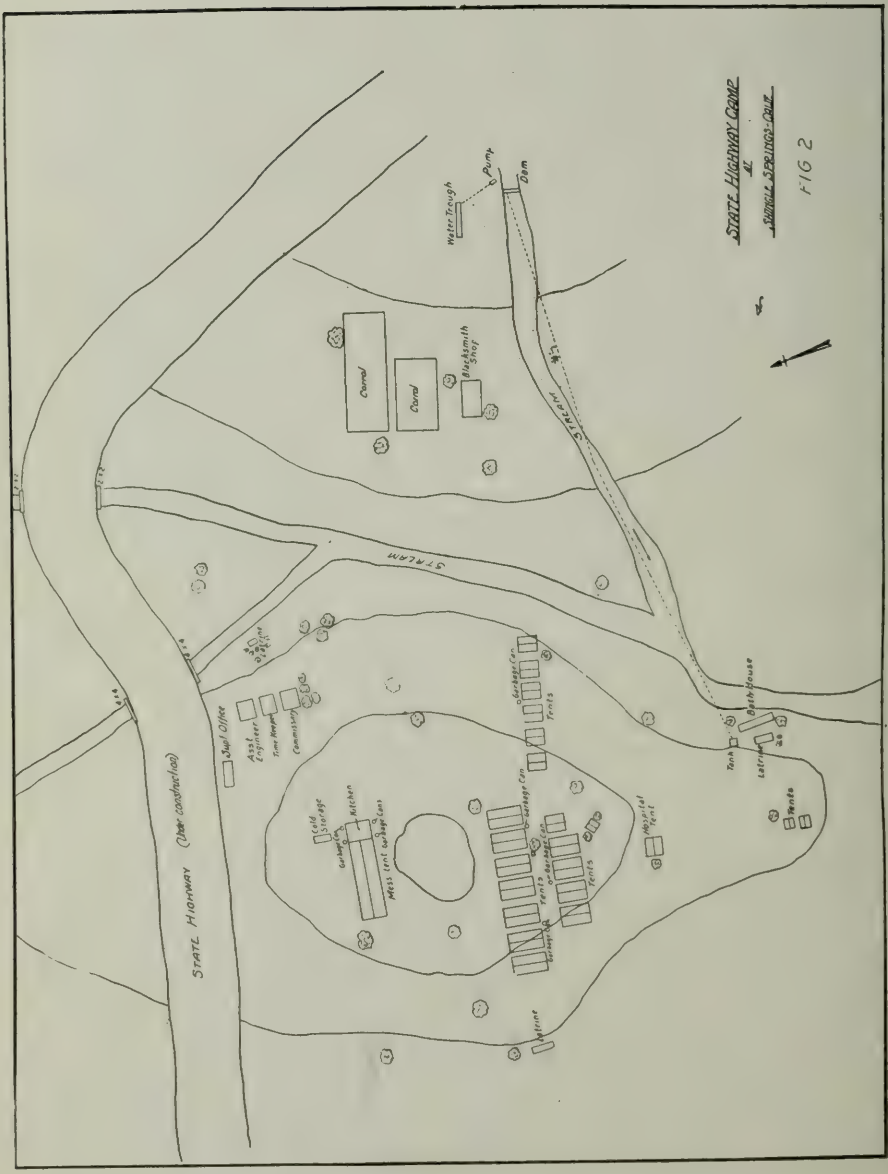
Symmes, Means & Chandler, Agricultural Engineers.

These experts have formally expressed their approval of the scheme of this pamphlet and of the several recommendations made therein.

The legislature of 1915 amended the Labor Camp Sanitation law, making it much stronger and entrusting the enforcement of the law to the Commission of Immigration and Housing. The Commission will not hesitate to use this new power when necessary, but it is still our desire to bring about better and sanitary conditions in labor camps by means of cooperation rather than by coercion.

If any portions of this pamphlet are not perfectly clear to you, or if you have a problem in housing or sanitation which we do not cover herein, we invite you to write to our San Francisco office stating your difficulty. Your inquiry will have the personal attention of our Engineering Department. And if we can not handle your problem satisfactorily through the mail, we shall willingly send a personal representative at no expense to you.

COMMISSION OF IMMIGRATION AND HOUSING OF CALIFORNIA,
Underwood Building, 525 Market Street, San Francisco



The layout of the State Highway Construction Camp at Shingle Springs, standardized by the Commission. Sleeping quarters, kitchen and dining tent are located on high ground. Corral is 500 feet away from tents.

CAMP SANITATION AND HOUSING.

Foreword.

A sanitary camp means an increase in the willingness and efficiency of the labor.

Suppose a camp of 200 men with a pay roll of $400.00 per day; if living conditions are bad and the sleeping accommodations make a reasonable night's rest impossible, if the food is fly infested, and the toilets unclean and revolting, the men become disgruntled and dissatisfied and some become sick. Experience has shown that often under such conditions there will be a 25 per cent loss of working efficiency, or a loss per day of $100.00, or $3,000.00 per month. The sum of $10.00 per day or $300.00 per month will cover easily the cost of good sanitation. This camp therefore can save $2,700.00 per month by installing model living conditions, and do away with the serious handicap of an ever-quitting force. Few employers of unskilled labor realize their loss through the "soldiering" of discontented workers. Petty strikes and a labor force continually quitting, both frequent products of bad camp conditions, often increase the cost of the work beyond the profit.

Practically all disease-carrying house flies breed in manure piles, kitchen refuse, garbage and human excrement.

Flies carry typhoid, dysentery, diarrhea and other intestinal diseases from human excrement to the food, thus spreading disease among the laborers and employers.

Dispose of these breeding and feeding places and you dispose of flies.

Dispose of flies and you dispose of one of the main causes of camp sickness.

Therefore, it is not only to the interest of humanity, but to your own interest to have a sanitary and "livable" camp.

I.

Location of Camp.

1. Every camp should be located on well drained ground. Low places, swamps and wet areas should be avoided, on account of both the discomfort attached to wet quarters and the possibility of affording breeding places for malaria-bearing mosquitoes.

II.

Layout of Camp.

1. Tents and portable houses should be arranged in rows so that the surroundings can be kept clean easily.

2. The kitchen, mess and commissary houses should be at least 100 feet from the sleeping quarters.

3. The stable, sheep corral and chicken coops should be at least 600 feet from the kitchen and mess house, and at least 500 feet from the sleeping quarters.

4. The toilets should be placed at least 75 feet from the sleeping quarters and 200 feet from the kitchen and mess house.

5. If incinerators for kitchen garbage are used, they should be located near the kitchen.

6. The hospital tent or house should be 200 feet from the kitchen and mess tent, and 75 feet from the sleeping quarters.

Figure 1 (page 4) shows a suggested layout of a model camp.

Figure 2 (page 6) shows the layout of the State Highway Construction Camp at Shingle Springs, standardized by the Commission.

Figure 3 (page 10) shows the main camp layout of the Durst Bros. hop ranch at Wheatland, planned by the Commission.

III.

Water Supply.

1. A plentiful supply of wholesome water for drinking and bathing should be supplied.

2. In every case, the supply must be absolutely free from organic contamination.

3. Ground water supplies from wells should be covered at the top, to insure against surface pollution. Water tanks should be carefully covered. Intakes in streams or springs should be covered and screened, and they should be cleaned out weekly.

4. Old wells in questionable positions with reference to surface drainage should be condemned and, whenever there are no wells free from pollution upon a permanent camp site, new wells should be sunk.

5. Whenever it is necessary to erect a camp at a place where the only water available is known to be contaminated or is even of questionable quality, such water should be purified by boiling.

6. All privy vaults and cesspools should be at least 200 feet from the water supply and so located that pollution is impossible.

Figure 4 (page 11) shows how a well may become polluted by the contents of a privy vault.

Figure 5 (page 11) shows how a well located on high ground may be polluted by the contents of a cesspool lower down.

Figure 6 (page 11) shows how a cesspool located on high ground may fail to pollute a well lower down.

7. Frequent analyses of the water in use should be made to assure the water's purity.

8. If drinking water is kept in a barrel, the barrel should be cleaned frequently. The water should be drawn from this barrel by a faucet, and a tight cover kept on the barrel to prevent men from dipping in with a cup and also to prevent insects from entering.

9. The use of individual drinking cups should be encouraged among the employees.

IV.

Bunk Tents and Houses.

1. The tents or portable houses or the more permanent wooden bunk houses used for sleeping quarters, must afford at least 500 cubic feet of air for each person, in conformity with state law, unless there is some permanently open means of ventilation, such as a complete open side of the tent, or building, or permanent open ends or permanent opening at the top. These openings must be large enough to insure a continued supply of fresh air. The crowding of bunks should be avoided since the floor space is thereby diminished and the air supply obstructed.

2. If wooden bunk houses are used, there should be ample window space. Doors and windows should be screened in warm weather, to protect the occupants from flies and mosquitoes.

3. There should be proper drainage around the tents and buildings, to keep the floors dry. In winter camps, tents and buildings should have wooden floors at least 12 inches above the ground.

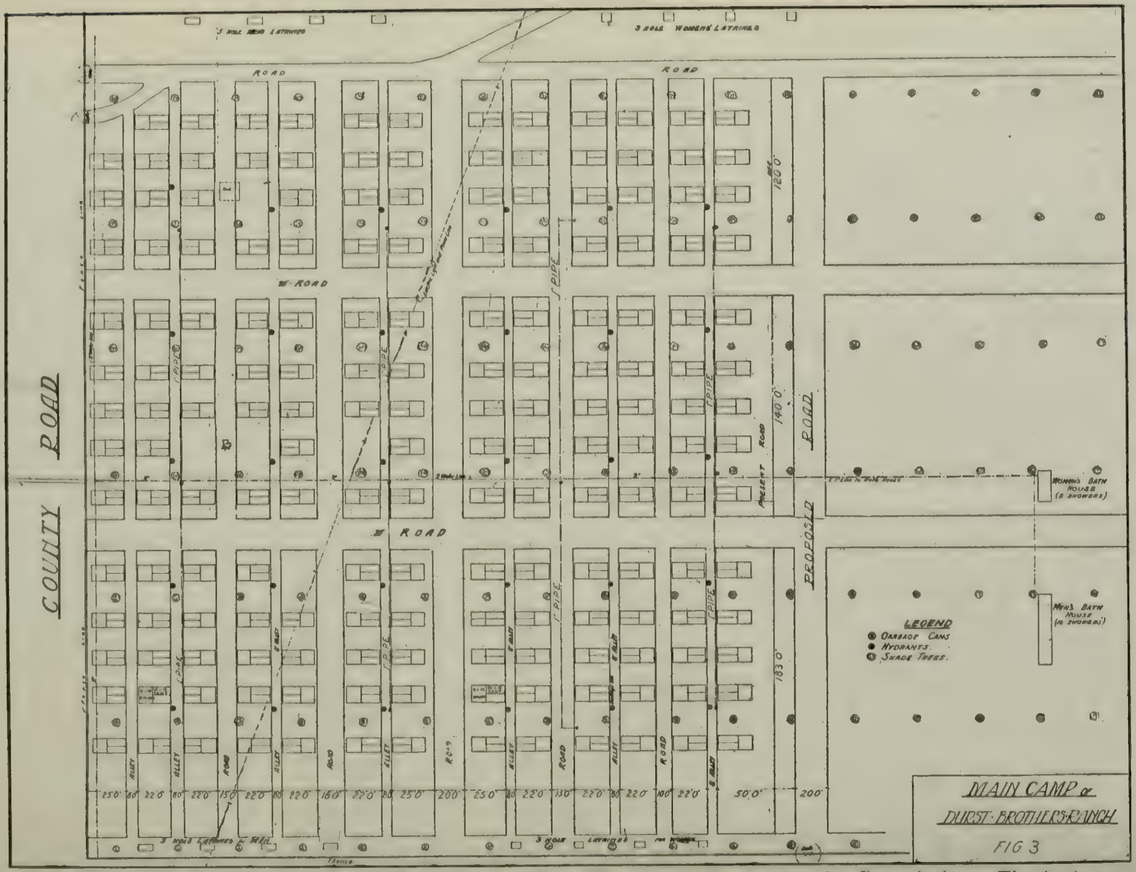
4. Floors in bunk houses or tents should be swept at least twice a week. Dry sweeping should be discouraged.

5. It is strongly recommended that iron bunks be used. These are easily made vermin proof and are acknowledged to be much more comfortable than straw bunks. But if bunks with straw bedding are used, the straw or hay should be changed at least once a week.

6. In winter camps and in all other camps where the men work in damp or wet surroundings racks for drying clothes should be built over the stoves in the bunk houses.

Standard Sizes of Tents, Showing Number of Occupants Permitted.

Size of tent	Height of walls	Number of occupants permitted
7 x 9½	3	1
9½ x 9½	3	1
9½ x 12	3	1
9½ x 14	3	1
12 x 12	3½	2
12 x 14	3½	2
12 x 16	3½	2
12 x 18	3½	2
14 x 14	4	3
14 x 16	4	3
14 x 16	3	3
14 x 18	4	3
14 x 20	4	4
14 x 24	4	4
16 x 16	5	4
16 x 18	5	4
16 x 20	5	5
16 x 24	5	6
16 x 30	5	7
16 x 35	5	9
18 x 18	5	5
18 x 20	5	6
18 x 24	5	7
18 x 30	5	9
18 x 35	5	10
18 x 40	5	12
20 x 24	5	8
20 x 30	5	10
20 x 35	5	11
20 x 40	5	13
20 x 50	5	16
24 x 30	6	14
24 x 35	6	16
24 x 40	6	18
24 x 50	6	23
24 x 60	6	27
30 x 40	6	25
30 x 50	6	32
30 x 60	6	38
30 x 70	6	44
30 x 75	5	44
30 x 84	5	48



The main camp layout of the Durst Bros. hop ranch at Wheatland, planned by the Commission. The tents are arranged in military style, in blocks, with sufficient distance between tents. Water is piped, and hydrants are provided in the streets. Garbage cans are in the alleys. Toilets are on east and west side of camp, near enough for convenience, but not too close. Men's and women's showers are about 140 feet from the camp.

Table (page 9) gives the standard sizes of tents, showing the number of occupants permitted in each tent.

Figure 7 (page 12) shows a 16 x 20 crowded tent occupied by 17 persons. This tent contained double deck bunks, each occupant having about 120 cubic feet of air. This bad condition existed in one of the camps before it was standardized by the Commission.

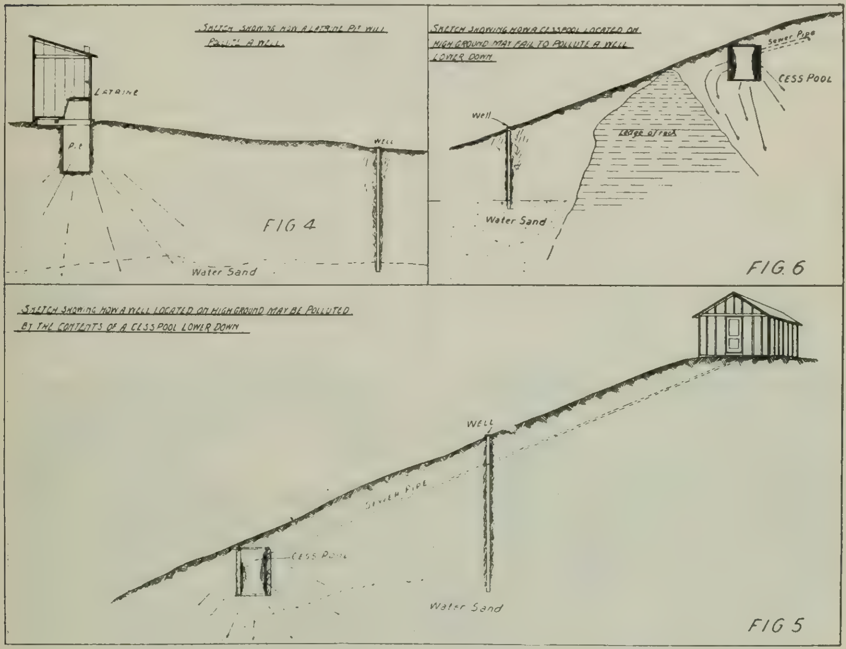

SKETCH SHOWING HOW A LATRINE PIT WILL POLLUTE A WELL.
LATRINE
PIT
WELL
FIG 4
Water Sand
SKETCH SHOWING HOW A CESSPOOL LOCATED ON HIGH GROUND MAY FAIL TO POLLUTE A WELL LOWER DOWN
Sewer Pipe
CESS POOL
Well
Ledge of rock
Water Sand
FIG. 6
SKETCH SHOWING HOW A WELL LOCATED ON HIGH GROUND MAY BE POLLUTED BY THE CONTENTS OF A CESSPOOL LOWER DOWN
WELL
SEWER PIPE
CESS POOL
Water Sand
FIG 5

Figure 4 shows how a well may become polluted by the contents of a privy vault. Figure 5 shows how a well located on high ground may be polluted by the contents of a cesspool lower down. Figure 6 shows how a cesspool located on high ground may fail to pollute a well lower down.

Figure 8 (page 13) shows a 10 x 26 triple deck bunk car, crowded with 19 persons, each having about 95 cubic feet of air. This also existed in one of the camps before it was corrected by the Commission.

Figure 9 (page 14) shows a 16 x 20 tent with 5 single bunks, each occupant having 500 cubic feet of air. This model arrangement is the result of the Commission's work in changing the conditions shown in Figure 7.

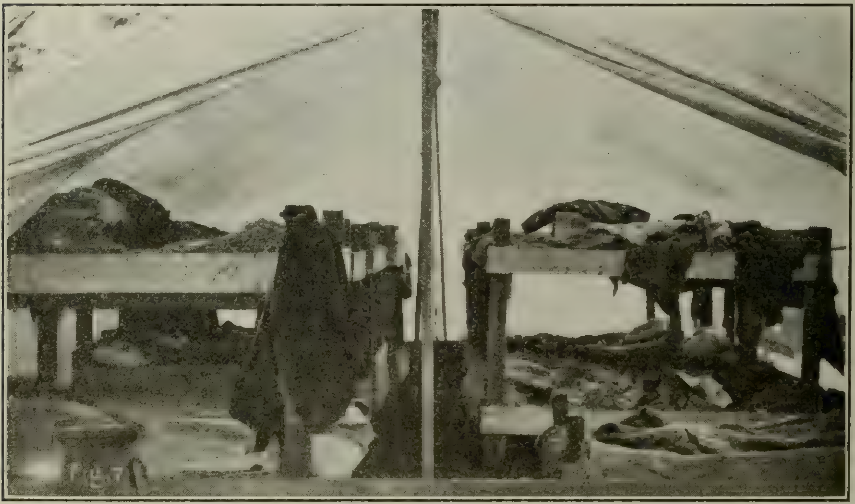
V.

Kitchens, Mess Tents and Houses.

1. Mess and cook tents or houses must have all openings screened and the doors should have spring hinges, coils or some other arrangement to close them automatically.

Figure 10 (page 14) shows a non-flyproof dining tent, as the Commission found it, where thousands of flies entered and infested the food. Conditions of this nature will in the end bring an epidemic of typhoid, dysentery, or other intestinal diseases to camps.

Figures 11 and 12 (pages 15 and 17) show the exterior and interior of another dining tent and kitchen as remodeled by the Commission.



A 16 by 20 crowded tent occupied by seventeen persons. This tent contained double deck bunks, each occupant having about 120 cubic feet of air. This bad condition existed in one of the camps before it was standardized by the Commission.

The seating capacity of this mess tent was increased from 80 to 130; and the cost of remodeling same at the State Highway Camp, Shingle Springs, was as follows:

1266 board feet lumber at $16 per thousand	$20 26
243 square feet black wire screen at $0.013	3 16
One tent fly 25 x 26 feet	23 75
Hardware	1 50
Labor	25 00
Total	$73 67

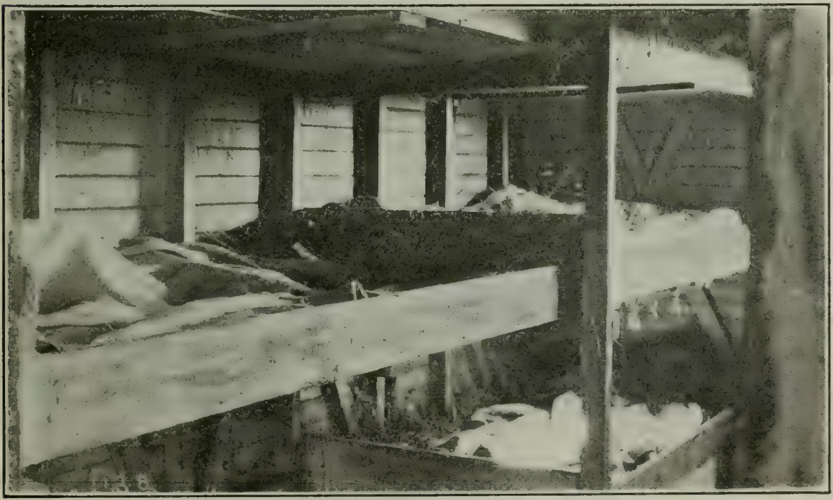
Figure 13 (page 16) shows a model dining tent (knock-down system), for 52 persons.

The bill of material for this mess tent and kitchen as shown in Figure 13 (page 16) is as follows:

30 pieces 2″ x 4″—14′ Oregon pine studs.
9 pieces 2″ x 4″—16′ Oregon pine plates.
14 pieces 2″ x 4″— 9′ Oregon pine rafters.
7 pieces 2″ x 4″—12′ Oregon pine rafter ties.
3 pieces 2″ x 4″—16′ Oregon pine ridge.
5 pieces 2″ x 4″—10′ Oregon pine rafters over vestibule.
6 pieces 2″ x 6″—20′ redwood mud sills.
45 pieces 1″ x 12″—10′ redwood boards.
48 pieces 1″ x 3″—10′ redwood battens.
12 pieces 1″ x 6″—10′ redwood over screen.
70 pieces 1″ x 6″— 7′ Oregon pine tongue and groove for vestibule.
12 pieces 1″ x 12″—10′ Oregon pine s. 1 s., for shelving.
2 pieces 1″ x 12″—16′ redwood for gable ends.
2 stock doors 2′ 6″ x 6′ 6″ x 1¼″.
2 screen doors 2′ 6″ x 6′ 6″.
1 stock door 3′ 0″ x 6′ 6″ x 1½″.
1 screen door 3′ 0″ x 6′ 6″.
500 square feet galvanized or copper wire screen.
900 square feet canvas for tent covering.
6 pair 6″ strap hinges for doors.
6 spring coils 12″ or 14″ for doors.
7 ridge connections marked "A," and 14—⅝″ x 5″ bolts.
8 corner connections marked "B," and 8—⅝″ x 3″ bolts.
14 rafter connections marked "C," and 28—⅝″ x 5″ bolts.
4 ⅝″ x 5″ bolts for stud connections.
75 square feet 2-ply Malthoid, or equal, roofing, or 9—5′ sheets corrugated galvanized iron.

The estimated cost of this mess tent and kitchen is as follows:

	San Francisco	Sacramento	Fresno	Los Angeles
Material	$117 65	$130 72	$156 86	$117 35
Labor	50 00	55 00	60 00	40 00
Total	$167 65	$185 72	$216 86	$157 00



A 10 by 26 triple deck bunk car, crowded with nineteen persons, each having about 95 cubic feet of air. This also existed in one of the camps before it was corrected by the Commission.

13

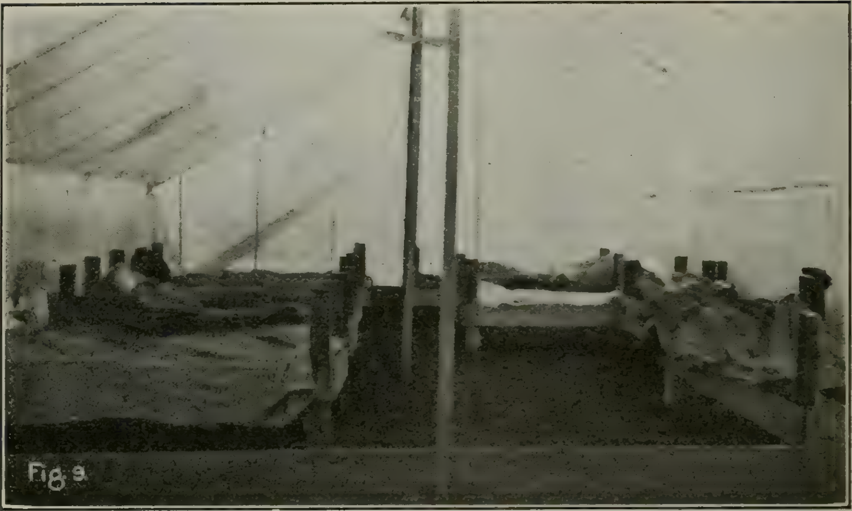


Fig. 9

A 16 by 20 tent, with 5 single bunks, each occupant having 500 cubic feet of air. This model arrangement is the result of the Commission's work in changing the conditions shown in Figure 7.

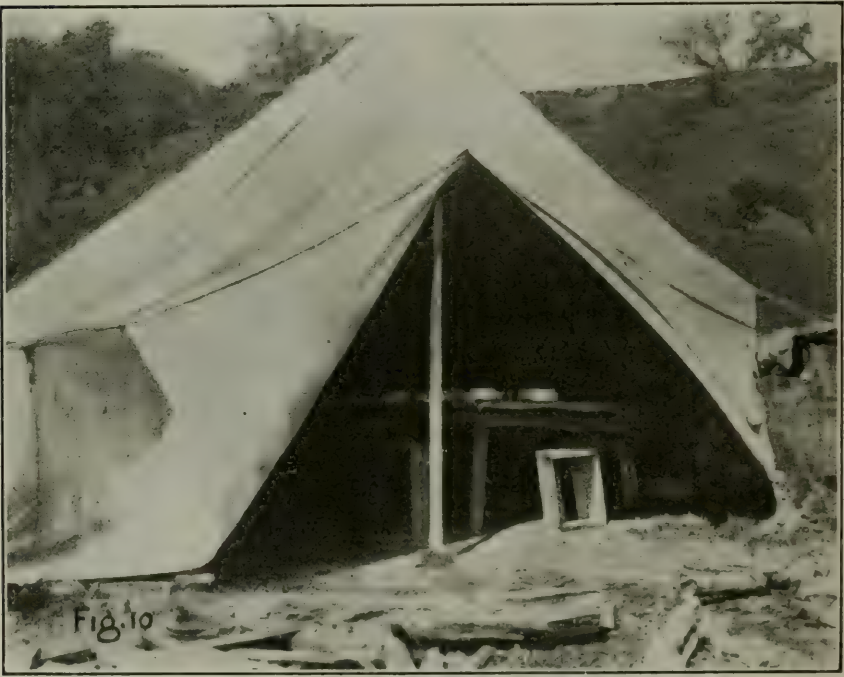


Fig. 10

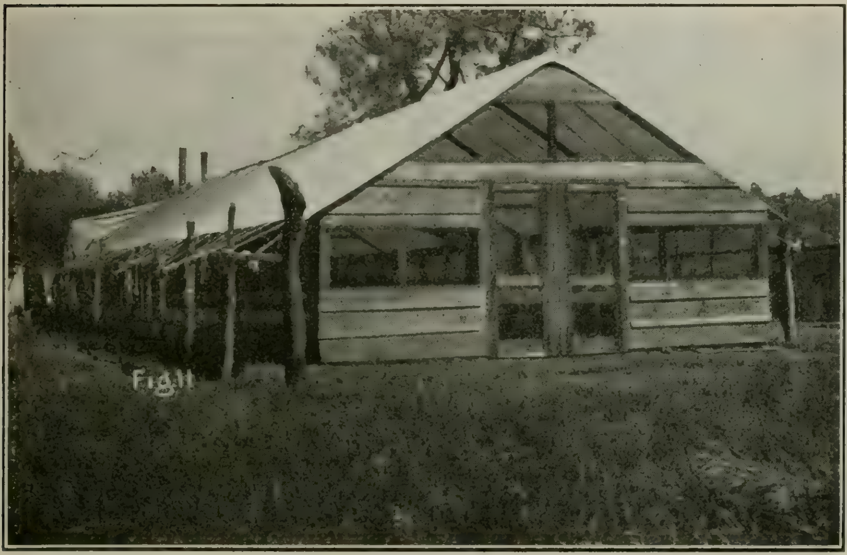
A non-flyproof dining tent, as the Commission found it, where thousands of flies entered and infested the food. Conditions of this nature will in the end bring an epidemic of typhoid, dysentery or other intestinal diseases to camps.

2. The kitchen and mess-house should be thoroughly cleaned at least once a week, and the floor should be swept daily. Dry sweeping should be discouraged.

3. All persons engaged in cooking and handling the food should be carefully examined, with particular attention as to whether or not they have suffered from typhoid fever or tuberculosis within recent years.

A recent official investigation into a typhoid outbreak of 93 cases at Hanford, traced the infection to food which had been contaminated during preparation by a woman recently recovered from typhoid.

Mild or ambulatory cases of typhoid fever are frequently unrecognized by a layman and are then as dangerous for infection as the severer cases.



Exterior of dining tent and kitchen, after remodeled by the Commission.

Typhoid infection very frequently takes place in the labor camps because persons preparing the food are "typhoid carriers." It is of record that certain persons though entirely recovered from typhoid have remained carriers and distributors of the germs for years.

The excreta and urine of such a person, who is a carrier of typhoid infection, is full of thousands of germs. If a fly reaches this excreta, his wings and feet are covered with a multitude of these virulent germs and if he touches food, the new infection of a healthy person is completed. This is the medical reason for screened toilets and an efficient disposal of manure and garbage.

Undoubtedly every large California labor camp, practically without exception, has its typhoid carrier or carriers.

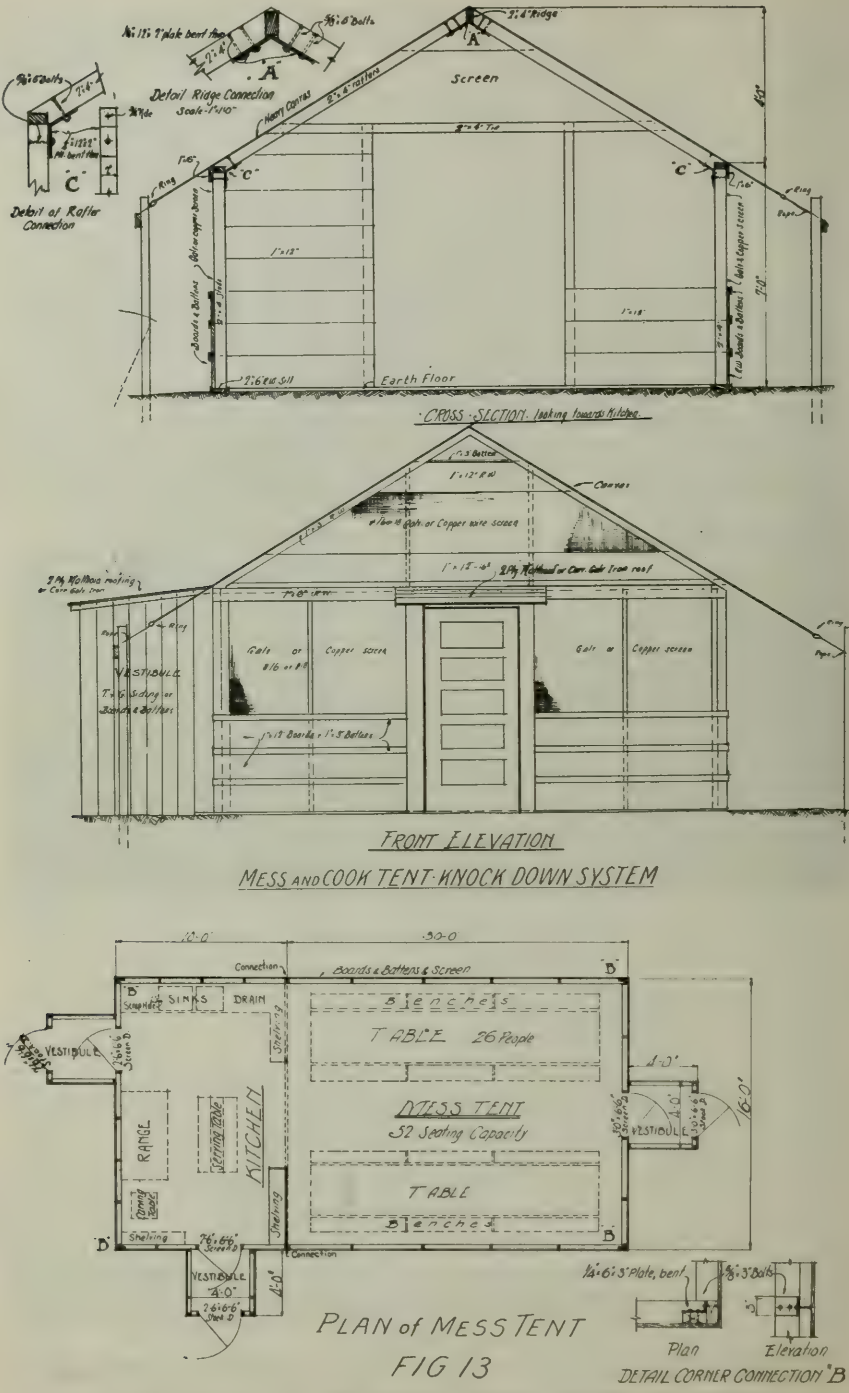


FIG 13

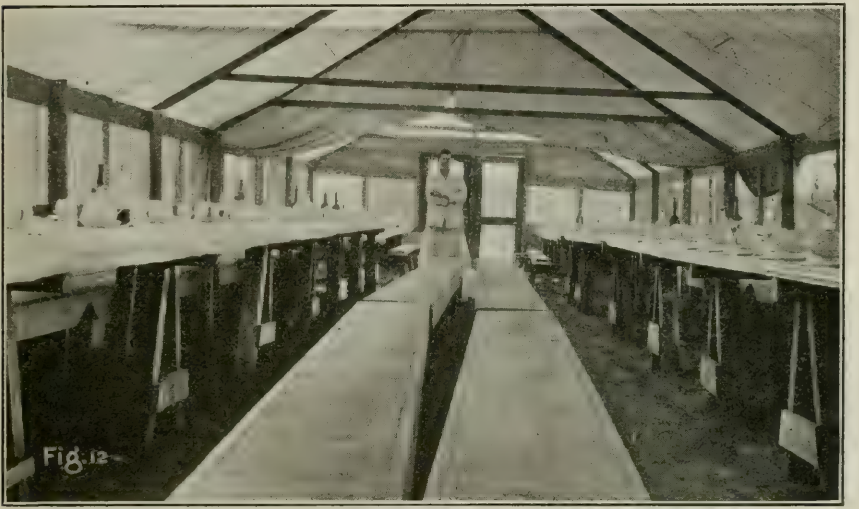
A model dining tent (knock-down system), for fifty-two persons.

4. Any person afflicted with a communicable disease should be kept away from the kitchen and messhouse.

5. In the case of cooks, helpers and waiters, absolute cleanliness of person and clothes should be insisted upon.

6. All perishable food supplies should be protected from putrefaction and insects. In remote localities where ice can not be obtained, a small screen inclosure should be built in the shade and covered with burlap or canvas which should be kept wet in warm weather. This will keep fresh, meats, eggs, butter, milk, etc.

7. Cooks and waiters should be instructed to keep the screen doors and windows closed. Refusal to comply with these instructions should be cause for dismissal.



Interior of dining tent, after remodeled by the Commission.

VI.

Garbage and Refuse Disposal.

1. Kitchen garbage and refuse must be kept in fly-proof covered containers, preferably metal, until permanently disposed of. Such containers should be emptied at least once in two days.

2. Fly-tight receptacles should be provided convenient to the sleeping quarters, for the collection of wastes, such as paper, cast-off clothing, etc.

3. Garbage and kitchen waste water must not be emptied or drained into rivers or streams. Such pollution of running water is in violation of chapter 374 of the Statutes of 1913. Drains for kitchen wastes must be carefully enclosed.

4. All garbage should be disposed of either by incineration, by burying, or by feeding to hogs. (Hogs, allowed to roam at large in a camp. constitute a serious menace to health. They should be kept in pens at a considerable distance from the kitchen—preferably 400 or 500 yards.) Garbage should not be fed to chickens, as they will not consume it all, thus affording fly breeding and feeding places.

5. Incinerators for the burning of garbage and wastes can be easily and cheaply constructed.

Figure 14 shows a chimney type incinerator for a camp of 2,000 persons. This can be built of rock, cobblestones or old brick by unskilled labor. Such an incinerator can be built for about $30.00, provided material is available on the ground.

For a permanent camp the incinerator should be built of either concrete or brick and lined with fire brick.

The bill of material for the above incinerator is as follows:

Brick Type.

800 fire brick.
2,500 common brick.
1,800 pounds grate bars or old rails.
36 cubic feet excavation.

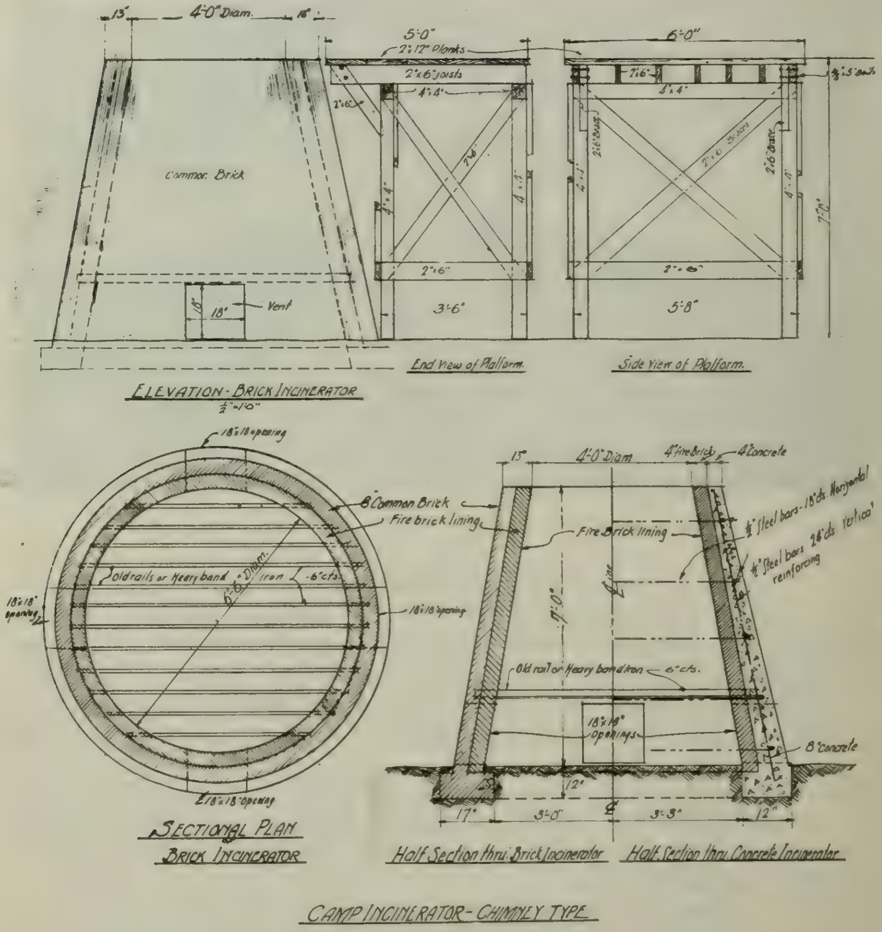


FIG. 14

A chimney type incinerator for a camp of 2,000 persons. This can be built of rock, cobblestones or old brick by unskilled labor. Such an incinerator can be built for about $30.00, provided material is available on the ground.

Concrete Type.

24 cubic feet excavation.
128 cubic feet concrete.
120 pounds reinforcing steel.
800 fire brick.
1,800 pounds grate bars or old rails.

Platform Material.

4 pieces 4″ x 4″—7′ redwood posts.
2 pieces 4″ x 4″—6′ redwood girders.
115 lineal feet 2″ x 6″ Oregon pine joists and braces.
30 lineal feet 2″ x 12″ Oregon pine plank floor.
20 lineal feet 2″ x 12″ redwood stair stringers.
30 lineal feet 2″ x 12″ redwood stair treads.
44 lineal feet 2″ x 4″ Oregon pine braces and supports.
9 lineal feet 2″ x 3″ Oregon pine, s. 4 s., hand rail.
4 ⅝″ x 5″ bolts.
10 pounds 20d nails.

The estimated cost of this incinerator as shown in Figure 14 is as follows:

	San Francisco	Sacramento	Fresno	Los Angeles
Brick type—				
Material	$74 80	$83 40	$86 20	$70 20
Labor	56 70	63 00	64 00	50 00
Total	$131 50	$146 40	$150 20	$120 20
Concrete type—				
Material	$69 10	$89 90	$94 30	$67 35
Labor	65 90	70 00	73 00	45 50
Total	$135 00	$159 90	$167 30	$112 85

Figure 15 (page 20) shows a stack type incinerator for a camp of 150 people. The pan shown is 8 inches in depth and is used to evaporate liquid slops, while the solid garbage is placed on top of the fuel. By treating the liquid thus separately, a great deal of fuel is saved.

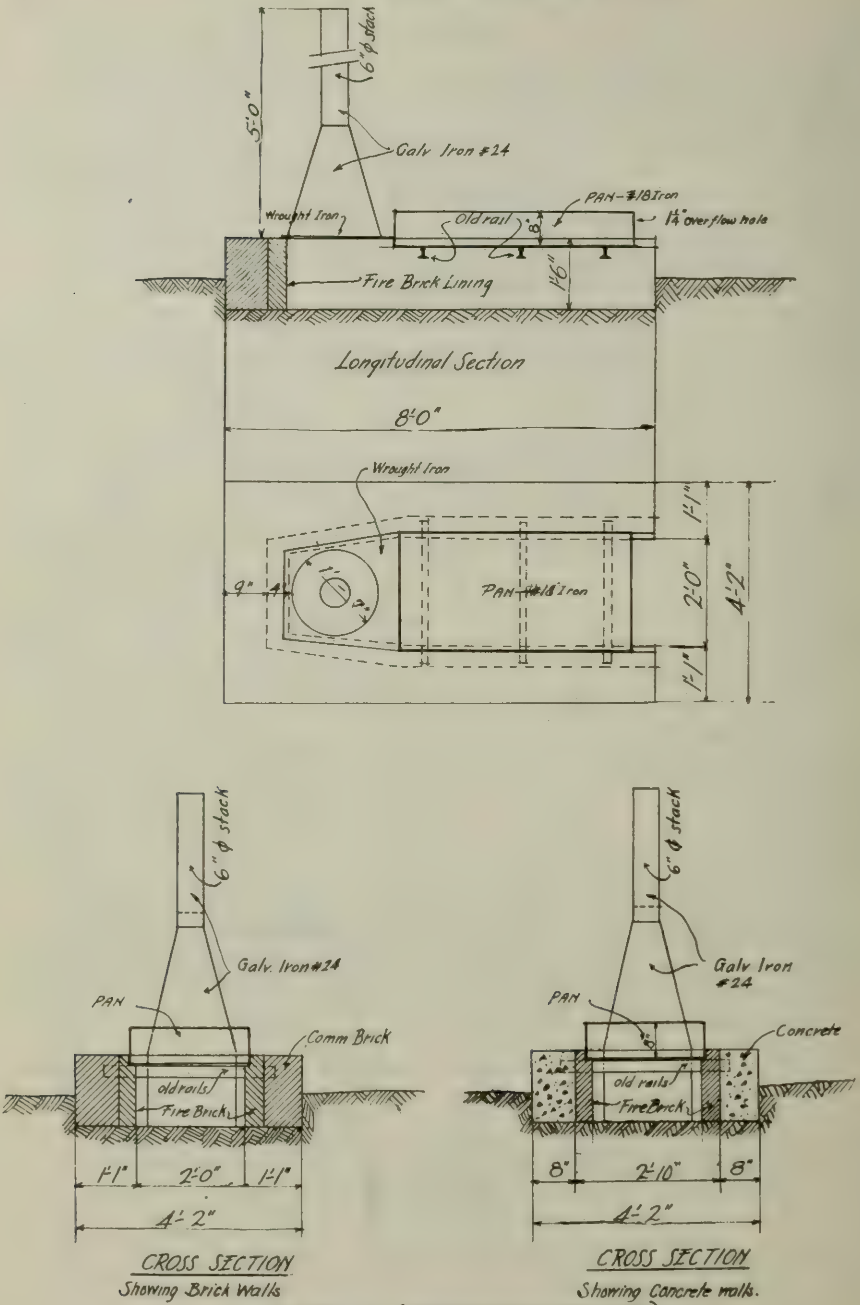
Bill of material is as follows:

Brick Type.

144 fire brick.
330 common brick.
20 cubic feet excavation.
225 pounds of old rail or grate bars.
22 square feet No. 24 galvanized iron for stack.

Concrete Type.

20 cubic feet concrete.
144 fire brick.
20 cubic feet excavation.
225 pounds old rails or grate bars.
22 square feet No. 24 galvanized iron for stack.
1 piece wrought iron plate, 26 x 26 inches.
21 square feet sheet metal for pan.



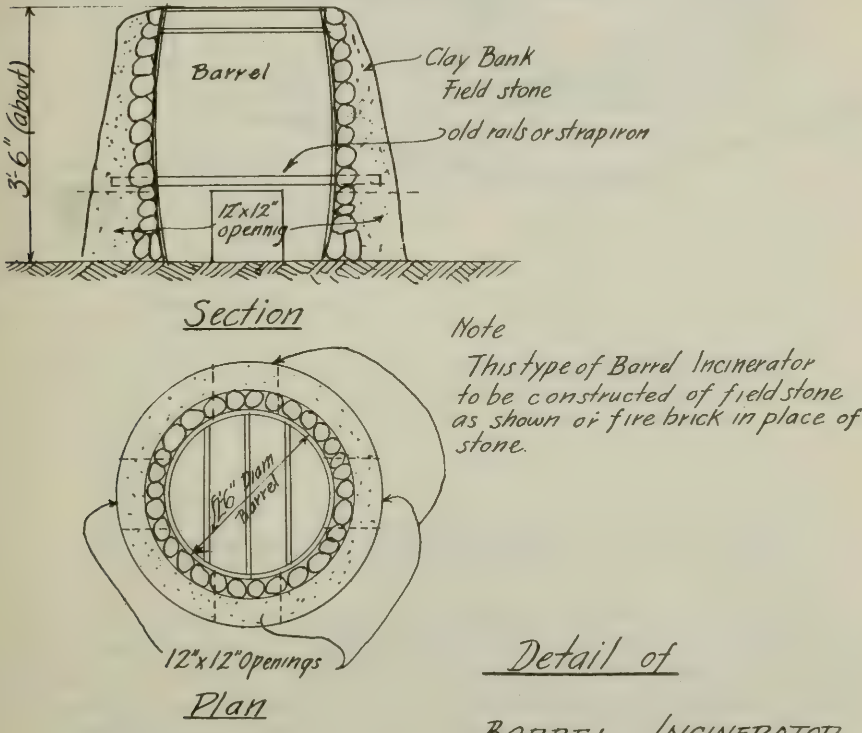
DETAIL OF INCINERATOR (STACK TYPE)

FIG. 15

A stack type incinerator for a camp of one hundred and fifty people. The pan shown is 8 inches in depth and is used to evaporate liquid slops, while the solid garbage is placed on top of the fuel. By treating the liquid thus separately, a great deal of fuel is saved.

The estimated cost of this incinerator as shown in Figure 15 is as follows:

	San Francisco	Sacramento	Fresno	Los Angeles
Brick type—				
Material	$21 00	$22 45	$23 90	$19 00
Labor	14 00	16 00	17 50	12 50
Total	$35 00	$38 45	$41 40	$31 50
Concrete type—				
Material	$21 75	$23 65	$24 60	$19 40
Labor	10 25	12 95	14 60	9 00
Total	$32 00	$36 60	$39 20	$28 40



Note

This type of Barrel Incinerator to be constructed of field stone as shown or fire brick in place of stone.

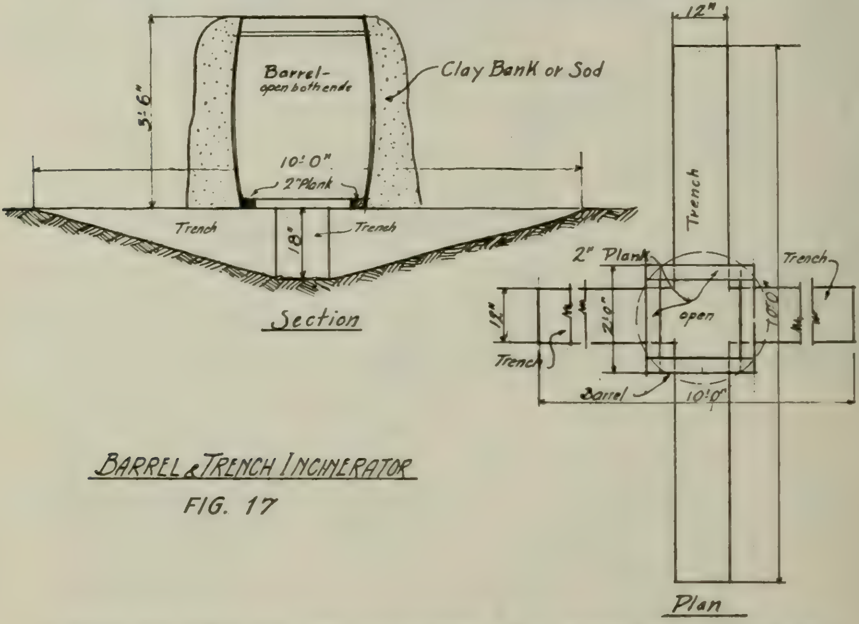
FIG. 16

A barrel type incinerator suitable for a camp of one hundred and twenty-five persons.

Figure 16 shows a barrel type incinerator suitable for a camp of 125 persons, which can be built at the following cost:

One common flour or sugar barrel	$0 50
Placing clay	3 00
Old rails or scrap iron	50
Incidentals	2 00
Total	$6 00

Figure 17 shows a barrel and trench type incinerator suitable for a camp of 115 persons. This incinerator can be constructed in the following manner: Dig two trenches 10 feet long and 10 or 12 inches wide, bisecting each other. At the point of bisection, the trenches should be from 15 to 18 inches deep, gradually shallowing from this point to their origin. Over the place of bisection, place four boards to support an ordinary sugar or flour barrel. Around the barrel pile sods of earth and pack tightly up to the top of the barrel. If sods are not obtainable, use clay. Make a fire in the trench under the barrel and when the barrel is burned out, a hard cone of earth or clay is left.



BARREL & TRENCH INCINERATOR
FIG. 17

A barrel and trench type incinerator suitable for a camp of one hundred and fifteen persons.

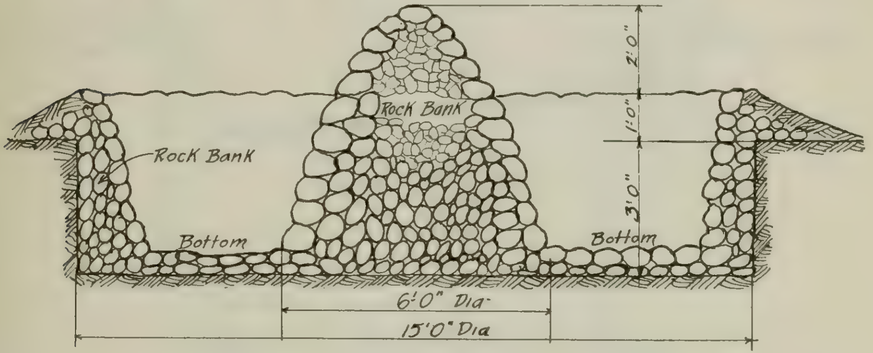
According to the direction of the wind, one trench opening near the cone is left open and the other three plugged with soil. Thus a flue is effected through the one opening and the top of the cone. The ashes should be raked out at the end of each day's use and a fresh fire started in the morning. Fuel and garbage are fed to the fire through the top of the cone.

The estimated cost of this incinerator is as follows:

One yard excavation	$1 00
One common sugar or flour barrel	50
Placing clay or sod	4 00
Incidentals	50
Total	$6 00

Figure 18 shows a rock pile incinerator which can be installed very cheaply if rock is available on the ground. This incinerator is suitable for a camp of about 2,500 persons. Construct as follows:

At some convenient point, dig a circular pit 3 feet in depth and 15 feet in diameter. Cover the bottom with loose stones to a depth of 14 to 16 inches. On this build a circular wall to a height of 1 foot above the original ground-line and pack tightly the excavated earth around the wall so as to provide a sloping approach, thereby preventing surface water from gaining access to the pit. Build a pyramid of large stones 4 or 5 feet high in the center to provide a central draft. The heat of the bottom stones evaporates the liquid slops while the solids are soon consumed as fuel for the fire. Precautions should be taken to empty the garbage into the crematory and not around it.



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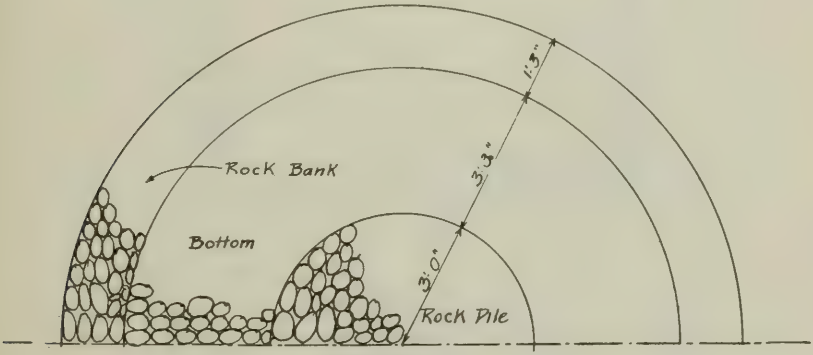


Half-Plan

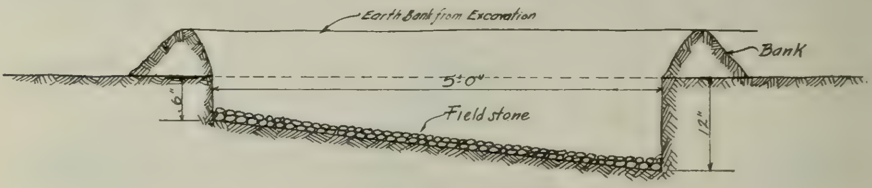
Rock Pile Crematory

FIG. 18

A rock pile incinerator which can be installed very cheaply if rock is available on the ground. This incinerator is suitable for a camp of about two thousand five hundred persons.

The estimated cost of this rock pile incinerator is as follows:

Twenty-two yards excavation	$22 00
Placing rock in place	15 00
Gathering and hauling stone	9 00
Cement	4 00
Total	$50 00



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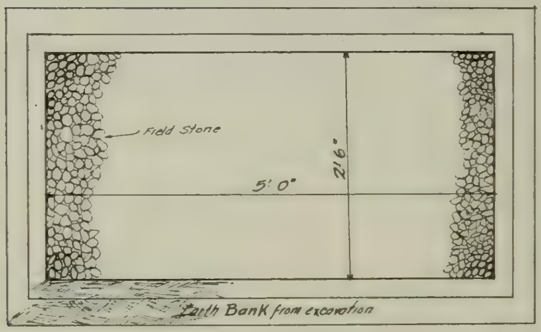


Plan

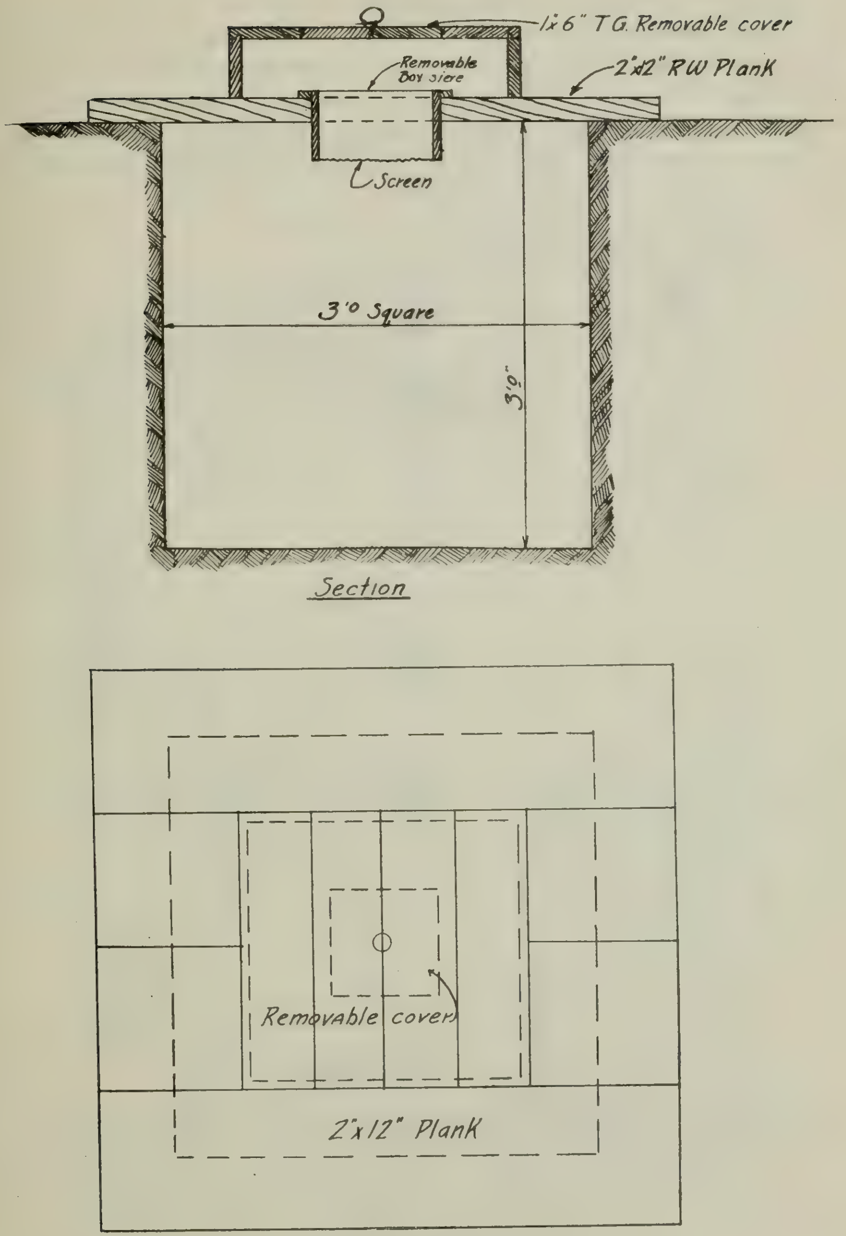
PIT INCINERATOR FIG. 19

A pit incinerator suitable for a camp of two hundred and fifty people.

Figure 19 shows a pit incinerator suitable for a camp of 250 people, which is estimated at the following cost:

Excavation	$1 00
Placing field stone	1 50
Incidentals	50
Total	$3 00

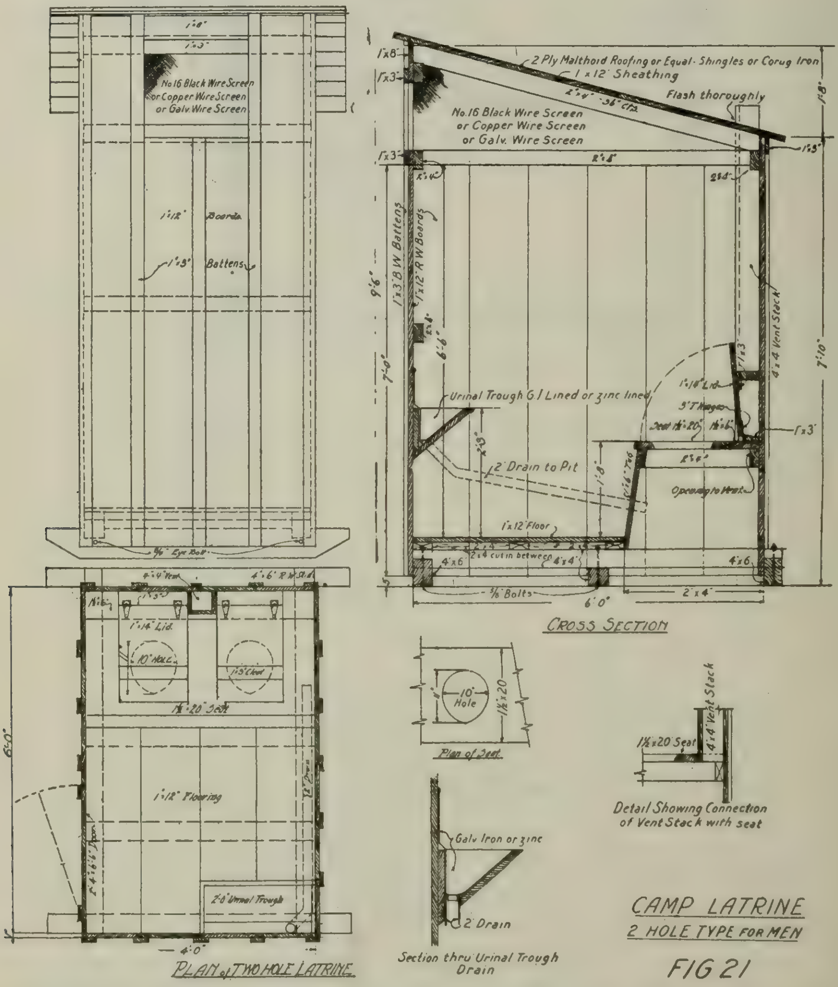
Construct as follows: Dig a pit 5 feet long, 2½ feet wide, 6 inches deep at one end and 12 inches deep at the other. Bank the excavated earth around the pit and fill it with stones on which to build the fire. When the stones have become heated, liquid refuse is poured into the pit at the shallow end where it gradually evaporates. Solid garbage is burned on the fire.



PLAN OF SLOP PIT FIG. 20

A slop pit which can be used in camps of a few weeks' duration. All kitchen waste may be thrown into this pit.

Figure 20 (page 25) shows a slop pit which can be used in camps of a few weeks' duration. All kitchen wastes may be thrown into this pit. To darken the pit and keep it free from flies, make a solid board top. Tamp it with earth and provide a detachable box sieve with cover, as shown in the figure. The pit should be 3 feet long, 3 feet wide and 3 feet deep when dug in clay. In more permeable soil, the dimensions may be somewhat reduced.



CAMP LATRINE
2 HOLE TYPE FOR MEN
FIG 21

Men's two-hole toilet. The seat covers should be constructed so as to drop down over the hole as soon as the person rises, as shown in figure.

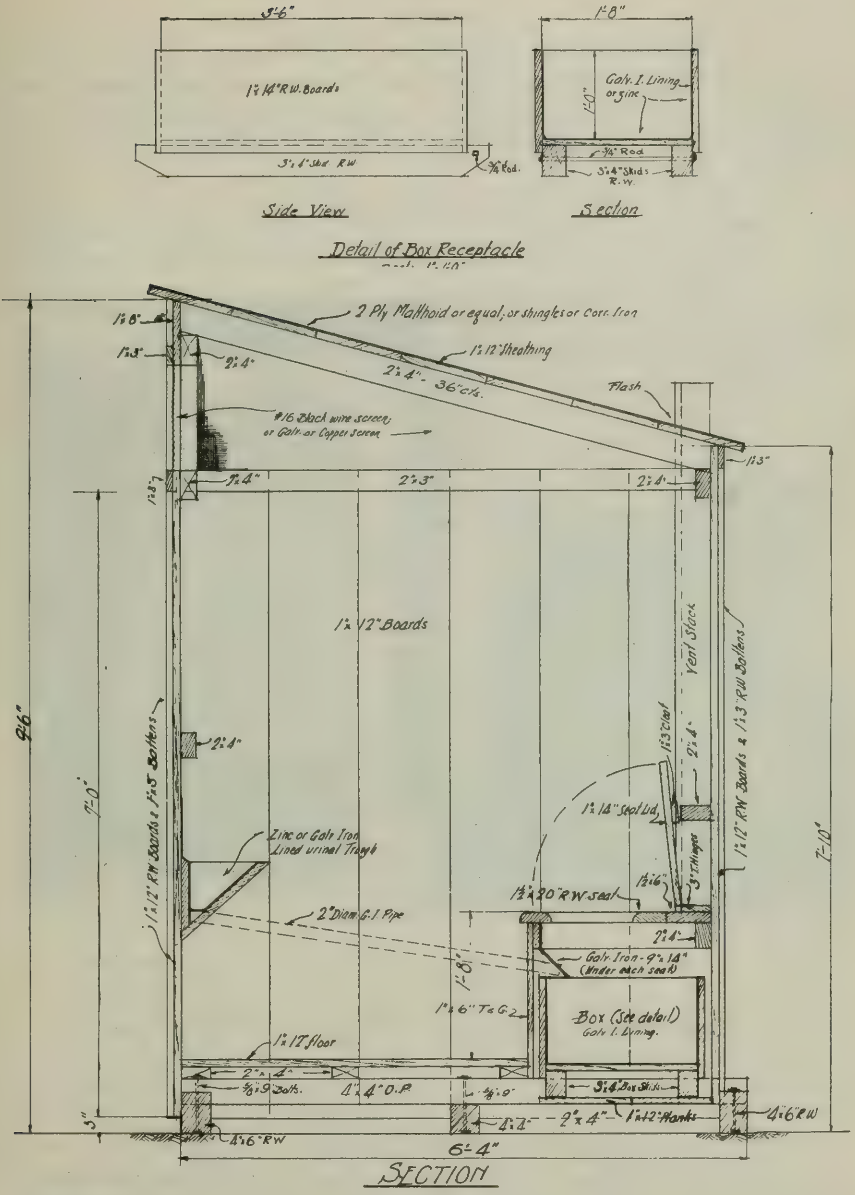


FIG. 22

— MENS LATRINE —

TWO HOLE-TYPE WITH BOX RECEPTACLE

A model fly-proof toilet with a box receptacle which can be hauled out into the field and the excreta used for fertilization.

VII.

Toilets.

1. There should be a sufficient number of toilets at convenient places, so as to afford one seat for every ten persons. In hop fields, fruit ranches and other places where men work in the field, there should be portable toilets, moved along conveniently near, affording at least one seat for 40 persons.

2. The toilets must be kept sanitary and fly-proof. All openings must be screened. The cracks must be battened and the bottom of the shelter must be banked with earth where the frame touches the ground.

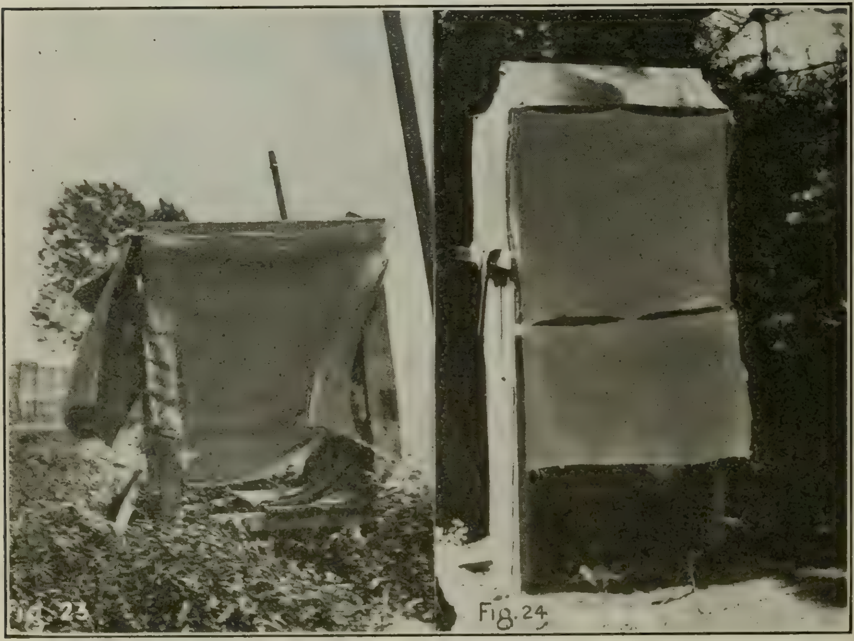


Fig. 23

Fig. 24

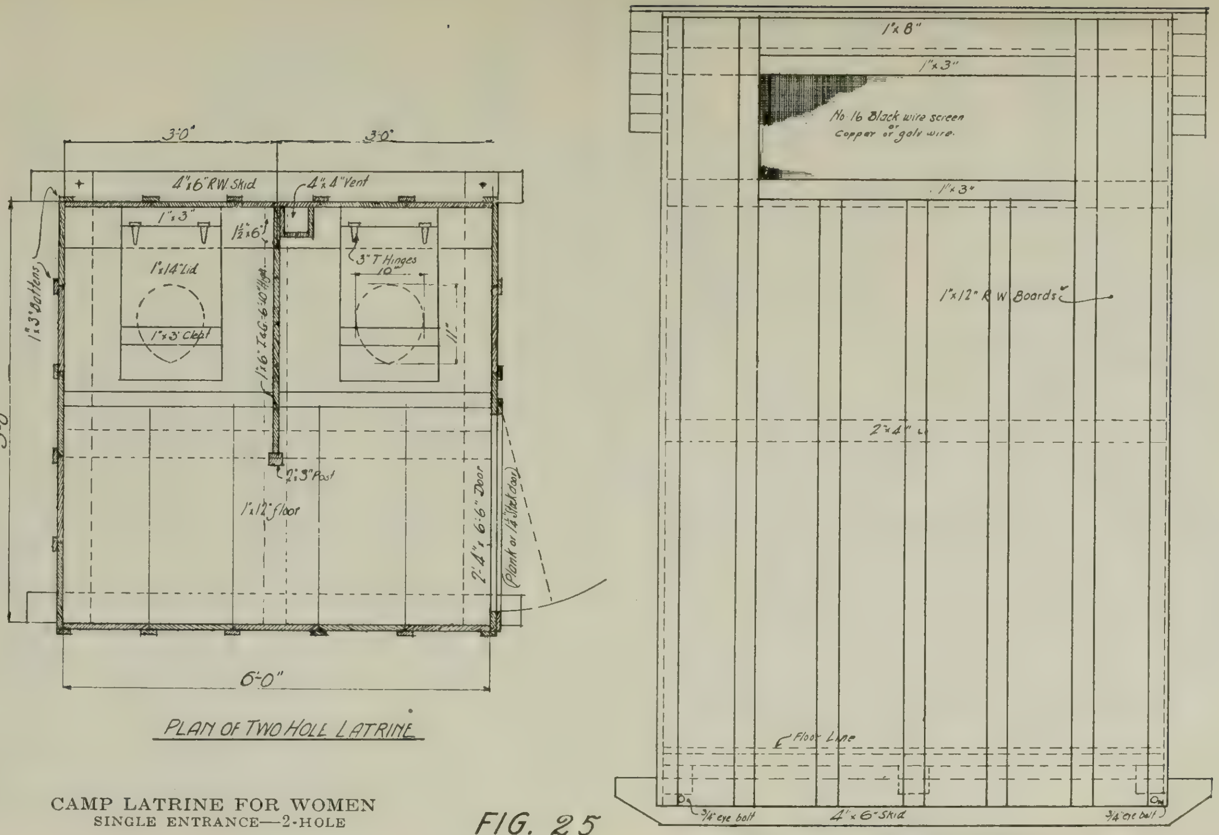
Toilets which violate every rule of sanitation. Actually in use in camps before the Commission began its inspection.

3. Doors should have spring hinges, coils or some other arrangement to close them automatically.

4. The seat covers should be constructed so as to drop down over the hole as soon as the person rises, as shown in Figure 21 (page 26).

5. The pit should be at least 4 feet in depth and when filled with excrement to within one foot of the surface, the building must be moved over a new hole, and the old hole filled with earth or thoroughly burned out with oil or oil-soaked straw.

6. The surface of the excreta in the pit must be kept well covered with crude oil, lime, ashes, dirt or other similar substance.



PLAN OF TWO HOLE LATRINE

·ELEVATION OF TWO HOLE LATRINE·

FIG. 25

CAMP LATRINE FOR WOMEN
SINGLE ENTRANCE—2-HOLE

A fly-proof toilet for women, with a single entrance and partition.

Crude oil is preferable for the following reasons:

(*a*) It is easily handled and the person who applies it runs no risk of contamination from the fecal matter.
(*b*) It is relatively small in bulk and easily transported.
(*c*) It keeps down bad odors and is repellant to flies.
(*d*) It does not fill the pit so quickly as lime or dirt, thus prolonging the usefulness of the toilet.

7. A urinal trough, as shown in Figure 21 (page 26), should be in each men's toilet, and this should be thoroughly washed out daily and the inside painted with crude oil.

8. If a box or other receptacle is used to receive the excreta, the contents should be emptied twice a week, the receptacle thoroughly washed and the inside painted with crude oil.

Figure 22 (page 27) shows a model fly-proof toilet with a box receptacle which can be hauled out into the field and the excreta used for fertilization after proper treatment.

9. In camps where women are employed, there should be a sufficient number of toilets for their use, marked "For Women Only." These should be at least 50 feet distant from the men's toilets.

10. Cleanliness and care in the use of all toilets should be insisted upon.

11. Paper should be provided in all toilets.

12. The placing of toilets over a river or stream is expressly forbidden by chapter 374 of the Statutes of 1913.

13. Information concerning the installation of flush toilets in connection with septic tanks will be furnished upon request.

Figures 23 and 24 show two toilets which violate every rule of sanitation. These were actually in use in camps before the Commission began its inspection. (See page 28.)

Figure 25 shows a fly-proof toilet for women, with a single entrance and partition. (See page 29.)

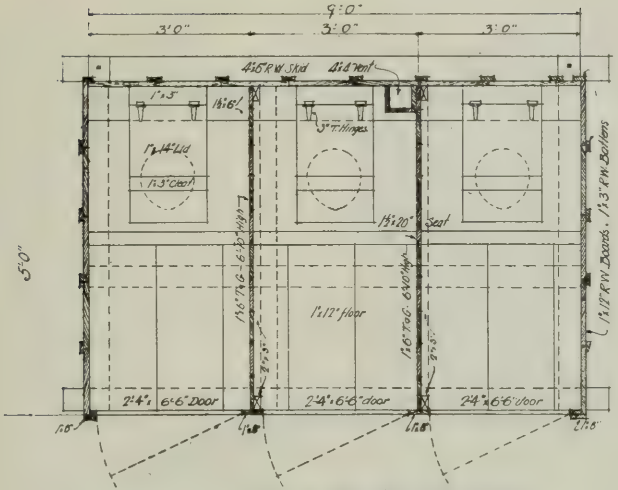
Figure 26 (page 31) shows a fly-proof toilet for women with separate entrances.

Figure 27 (page 33) shows an old insanitary toilet and a new sanitary toilets, the latter built at Perkins, on the Horst hop ranch, under the supervision of the Commission. This five-hole toilet is similar in construction to the one shown in Figure 21. The cost was as follows:

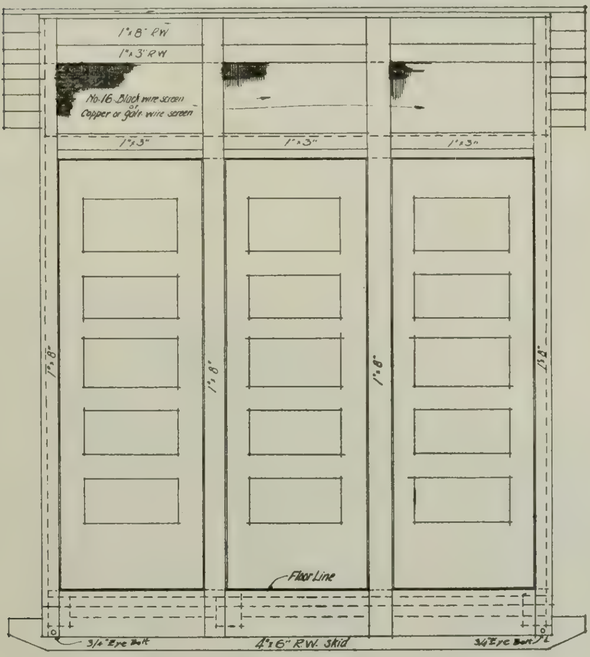
Lumber	$11 95
Hardware	81
Roofing paper	90
Labor	7 65
Total	$21 31

On the Durst Bros. hop ranch, at Wheatland, five-hole fly-proof toilets of the same construction were built, under the Commission's supervision, at the following cost per toilet:

Lumber	$12 24
Hardware	95
Roofing	90
Labor	8 00
Total	$22 09



PLAN of THREE HOLE TYPE LATRINE



ELEVATION

(THREE HOLE TYPE)

FIG. 26

CAMP LATRINE FOR WOMEN

A fly-proof toilet, with separate entrances, for women.

Figure 28 (page 33) shows three of the ten five-hole toilets, built on the Horst hop ranch, Wheatland, under the Commission's supervision, at the following cost per building:

Lumber	$9 87
Hardware	81
Paper roofing	90
Labor	7 00
Total	$18 58

(The lumber for this work was purchased in a carload lot at San Francisco at a very low figure.)

The bill of material for men's two-hole toilet, as shown in Figure 21 (page 26), is as follows:

2 pieces 4″ x 6″— 5′ 6″ redwood skids.
1 piece 4″ x 4″— 4′ redwood center skid.
2 pieces 4″ x 4″— 6′ 6″ Oregon pine girder.
3 pieces 2″ x 4″— 4′ Oregon pine joists.
4 pieces 2″ x 4″— 1′ 4″ Oregon pine cut in between joists.
24 pieces 1″ x 3″—10′ redwood battens, etc.
22 pieces 1″ x 12″—10′ redwood siding, s. 1 s.
4 pieces 1″ x 12″—14′ Oregon pine floor and roof, s. 1 s.
4 pieces 2″ x 4″—10′ Oregon pine plates.
3 pieces 2″ x 4″— 8′ Oregon pine rafters.
1 piece 1½″ x 20″— 4′ redwood, clear, for seat.
1 piece 1½″ x 6″— 4′ redwood, clear, for seat.
1 door, 2′ 4″ x 6′ 6″, made of planks or may be stock door.
35 square feet 2-ply Malthoid, or equal, prepared roofing, or shingles or corrugated galvanized iron may be used.
5 feet 2″ diameter galvanized iron pipe—urinal drain.
1 pair 6″ strap hinges for door.
1 heavy spring coil (12″ or 14″).
2 pair 3″ T hinges for seat covers.
6 ⅝″ x 9″ bolts, skids to girders.
4 ¾″ x 6″ eye bolts, 2″ eye; one each end through skids.
2 pieces 1″ x 6″—6′ redwood, s. 1 s., for vent stack.
1 piece 1″ x 4″— 6′ redwood, s. 1 s., for vent stack.
2 pieces 1″ x 14″— 1′ 8″ Oregon pine, s. 1 s., for seat cover.
1 piece 1″ x 8″— 4′ above screen front.
15 square feet No. 16 black wire screen, or galvanized or copper wire screen.
2 pieces 1″ x 6″—8′ tongue and groove, for seat front.
10 square feet zinc or galvanized iron urinal lining.

The estimated cost of this toilet is as follows:

	San Francisco	Sacramento	Fresno	Los Angeles
Material	$13 09	$16 89	$16 49	$14 93
Labor	8 90	10 40	11 20	7 00
Total	$21 99	$27 29	$27 69	$21 93

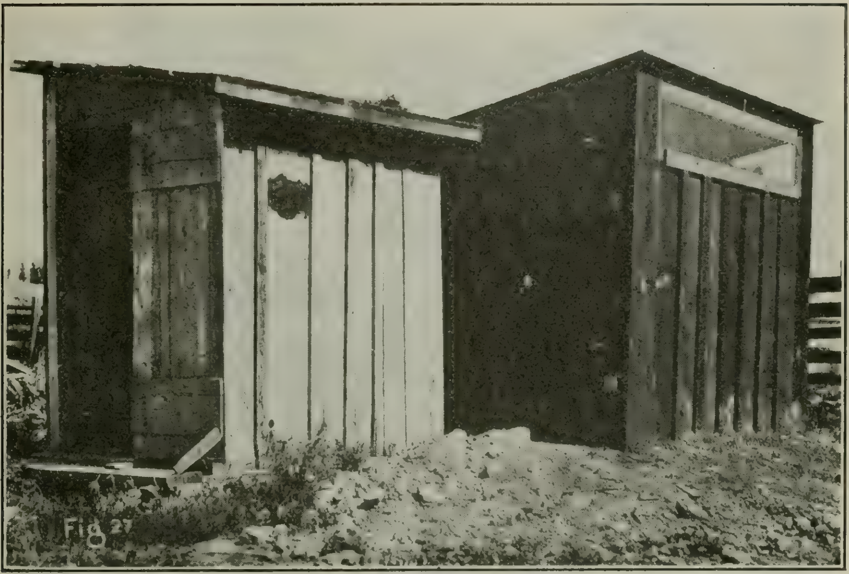


Fig 27

An old insanitary toilet to the left, and a new sanitary toilet to the right, the latter built at Perkins, on the Horst hop ranch, under the supervision of the Commission. This five-hole toilet is similar in construction to the one shown in Figure 21 (page 26).

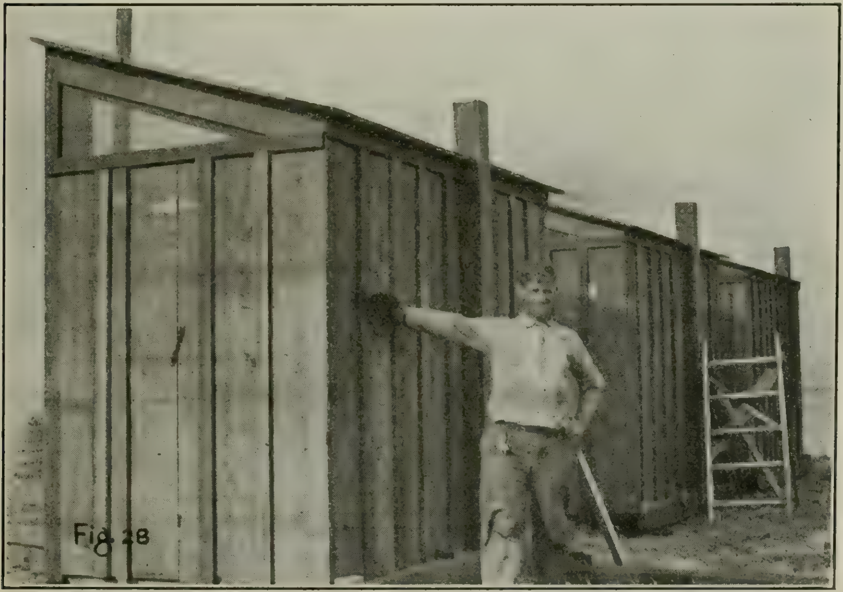


Fig 28

Three of the ten five-hole toilets, built on the Horst hop ranch, Wheatland, under the Commission's supervision.

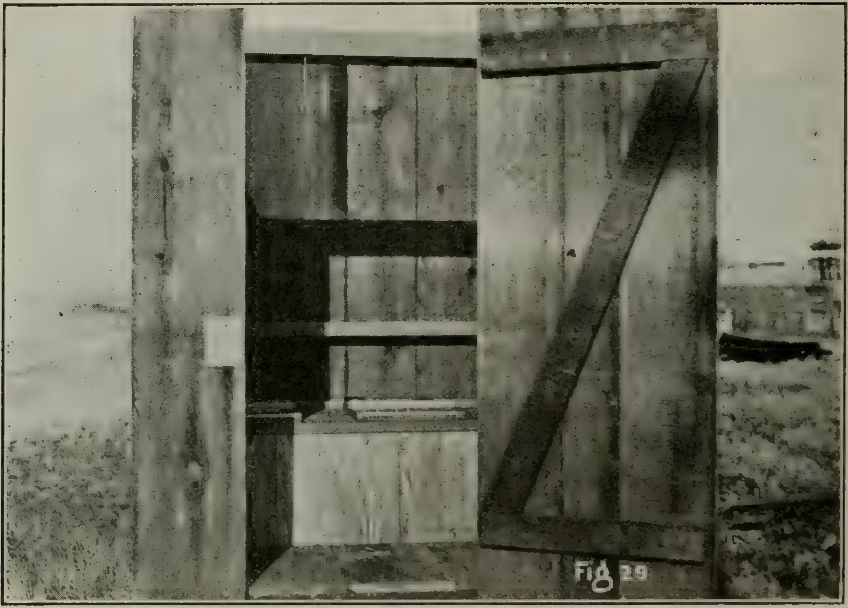
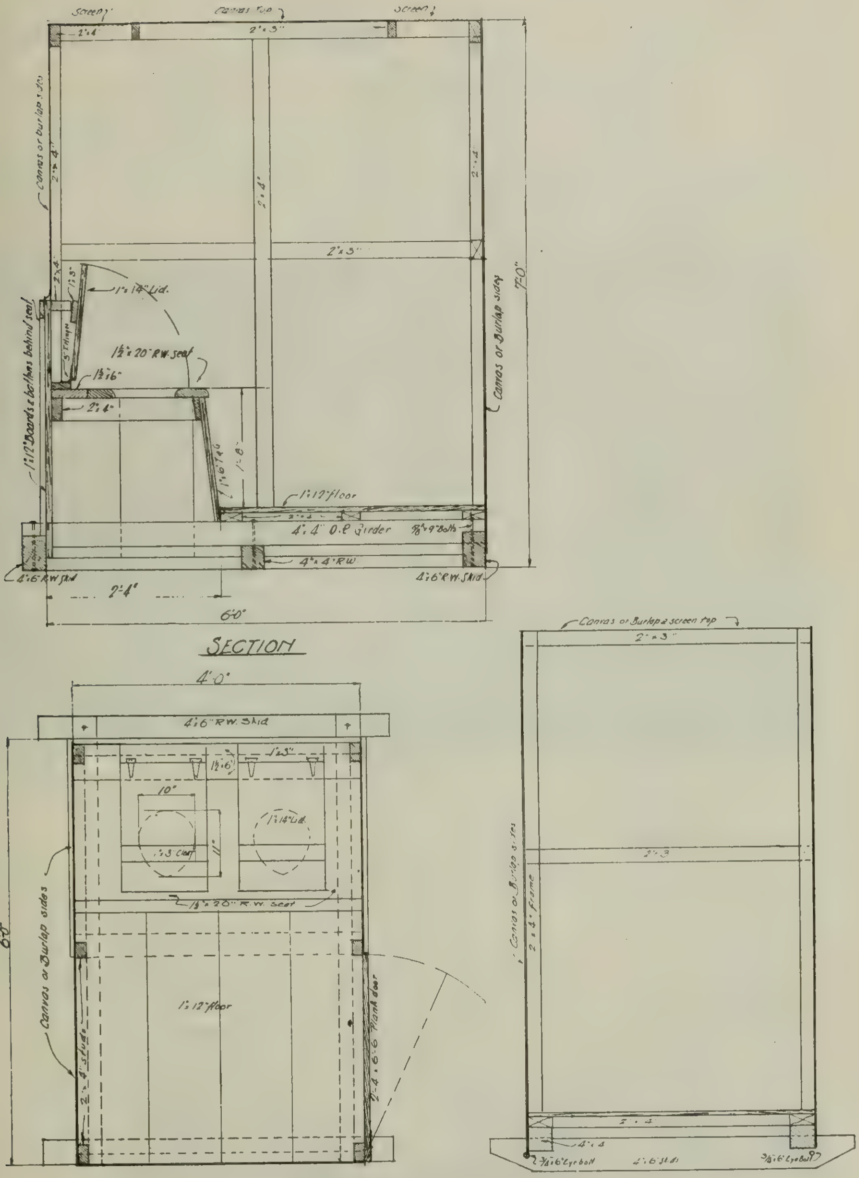


Fig 29

Picture of a portable toilet for field use, built under the Commission's supervision at the Horst ranch, Wheatland. This is suitable for use in hop fields, fruit ranches, etc.

The following is a bill of material for a two-hole toilet with box receptacle, as shown in Figure 22· (page 27):

2 pieces 4" x 6"— 4' redwood girder.
2 pieces 4" x 4"— 7' Oregon pine girder.
1 piece 4" x 4"— 4' redwood girder.
4 pieces 1" x 12"— 4' Oregon pine, s. 1 s., floor.
7 pieces 1" x 12"— 6' Oregon pine, s. 1 s., roof.
20 pieces 1" x 12"— 8' redwood for sides, s. 1 s.
2 pieces 1" x 12"—10' redwood for sides, s. 1 s.
4 pieces 1" x 3"—10' redwood battens.
18 pieces 1" x 3"— 8' redwood battens.
2 pieces 2" x 3"—12' Oregon pine plates.
4 pieces 2" x 4"—12' Oregon pine plates.
3 pieces 2" x 4"— 8' Oregon pine rafters.
2 pieces 1" x 6"— 6' redwood, s. 1 s., vent stack.
1 piece 1" x 4"— 6' redwood, s. 1 s., vent stack.
1 piece 1" x 8"— 4' redwood above screen front.
1 piece 1½" x 20"— 4' redwood, clear, for seat, and 2 pieces 1" x 6"—8' tongue and groove.
1 piece 1½" x 6"— 4' redwood for seat.
2 pieces 1" x 14"— 1' 8" Oregon pine, s. 1 s., for seat covers.
1 piece 1" x 14"—12' redwood for sides and ends of box receptacle.
1 piece 1" x 12"— 8' redwood for bottom of box receptacle.
2 pieces 3" x 4"— 4' redwood skids for box receptacle.
14 square feet galvanized iron or zinc lining for box receptacle.
1 door, 2' 4" x 6' 6", either plank or stock door.
35 square feet 2-ply Malthoid roofing, or equal; or shingles or corrugated galvanized iron.
1 pair 6" strap hinges for large door and 1 pair 4" strap hinges for small door.
1 heavy spring coil 12" or 14" for large door and 2 pair 3" T hinges for seat lids.
6 ⅝" x 9" bolts for girders.
1 ¾" x 24" rod for box receptacle.
15 square feet screen, black wire, No. 16; or galvanized or copper screen.



SECTION

FIG. 30 PLAN Scale 1"=1'-0" PORTABLE LATRINE 2 HOLE-TYPE (for FIELD USE ONLY) ELEVATION OF FRAME

Diagram of portable toilet shown in picture number 29.

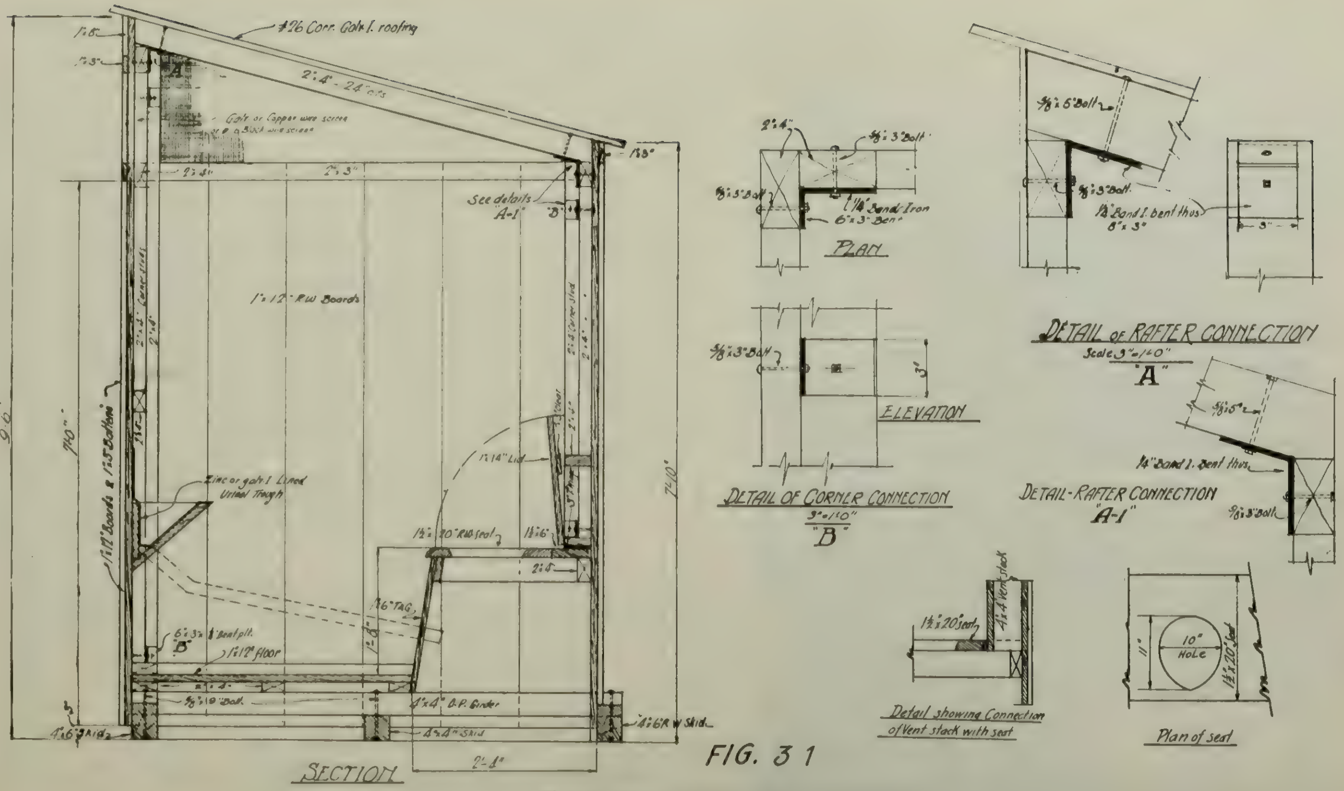


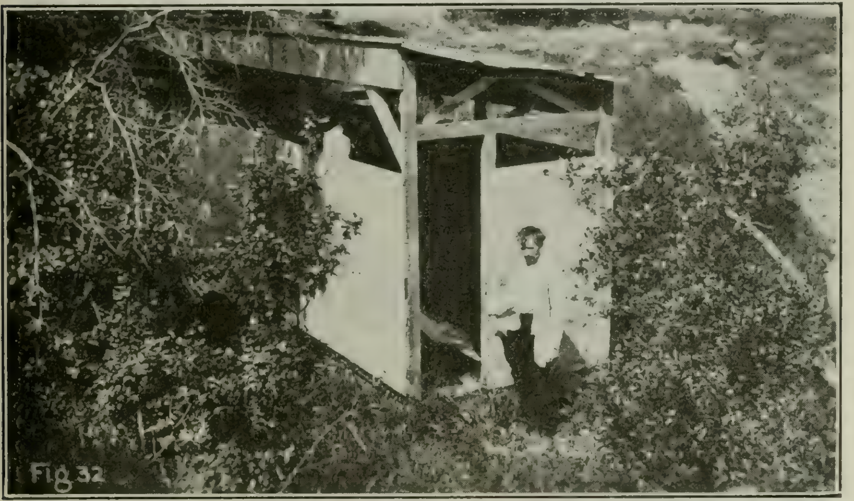
FIG. 31

KNOCK DOWN SYSTEM - MENS LATRINE

A fly-proof toilet, knock-down system, suitable for use in temporary camps. The corners marked "A" and "B" show the bolted connections, which can easily be taken apart and put up again.

The estimated cost of a toilet as shown in Figure 22 (page 27), is as follows:

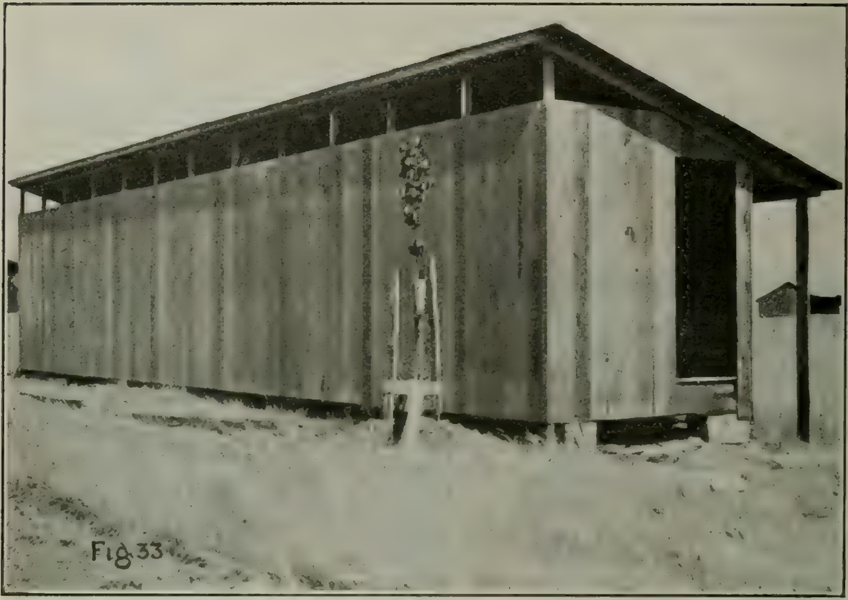
	San Francisco	Sacramento	Fresno	Los Angeles
Material	$15 49	$20 92	$21 45	$17 18
Labor	10 90	11 00	12 25	7 00
Total	$26 39	$31 92	$33 70	$24 18



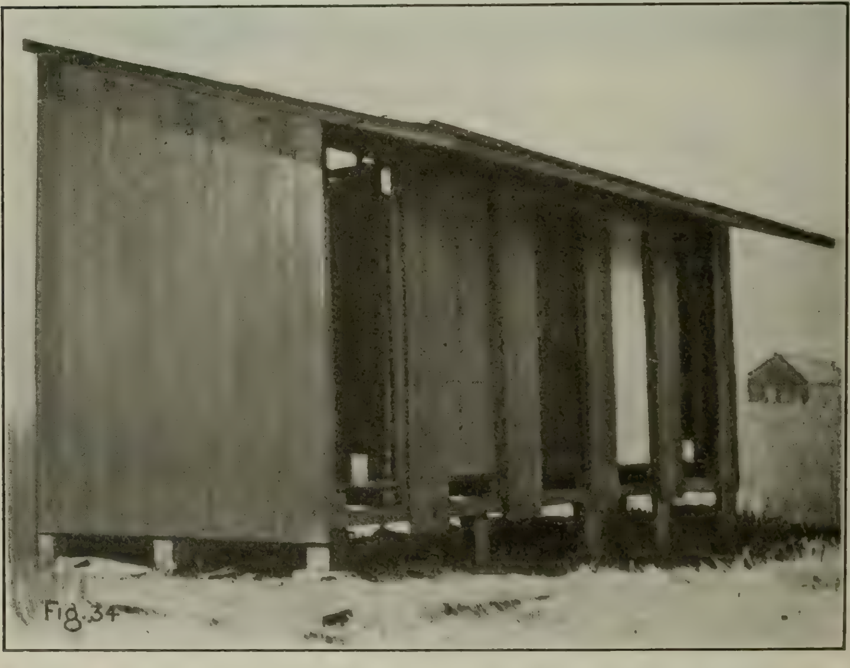
A men's six-shower bathhouse at the State Highway Camp, Shingle Springs, which was built under the supervision of the Commission.

The following is a bill of material for a women's toilet with single entrances, as shown in Figure 25 (page 29):

1 piece 4″ x 4″— 6′ redwood center skid.
1 piece 4″ x 6″—14′ redwood skid.
1 piece 4″ x 4″—20′ redwood girders.
2 pieces 2″ x 4″—12′ Oregon pine rafters.
6 pieces 2″ x 4″—12′ Oregon pine plates, etc.
3 pieces 2″ x 3″—12′ Oregon pine plates, etc.
2 pieces 1″ x 12″—10′ redwood, s. 1 s., siding, and 5 pieces 1″ x 12″—12′ redwood, for shelter fence.
14 pieces 1″ x 12″—16′ redwood, s. 1 s., siding.
16 pieces 1″ x 3″—16′ redwood battens, etc.
4 pieces 1″ x 3″—10′ redwood battens, etc.
8 pieces 1″ x 12″—12′ Oregon pine, s. 1 s., for floor and roof.
6 pieces 1″ x 6″—14′ Oregon pine tongue and groove, for partitions and seat front.
1 piece 2″ x 3″— 8′ Oregon pine, s. 4 s., post for partition and seat front.
1 piece 1″ x 8″— 6′ redwood over screen front.
1 piece 1½″ x 20″— 6′ redwood, clear, for seat, s. 1 s.
1 piece 1½″ x 6″— 6′ redwood, clear, for seat, s. 1 s.
2 pieces 1″ x 14″— 1′ 8″ redwood or Oregon pine seat cover, s. 1 s. (clear material).
1 piece 1″ x 6″—14′ redwood vent stack.
1 piece 1″ x 4″— 8′ redwood vent stack.
1 door 2′ 4″ x 6′ 6″ (plank or 1¼″ redwood stock door).
1 pair 6″ strap hinges for door.
1 heavy spring coil for door (12″ or 14″).
2 pair 3″ T hinges for seat covers.
4 ¾″ x 6″ eye bolts, 2″ eye; one on each end through skids.
6 ⅝″ x 9″ bolts, skids to girders.
48 square feet 2-ply Malthoid, or equal, roofing; or shingles or corrugated iron.



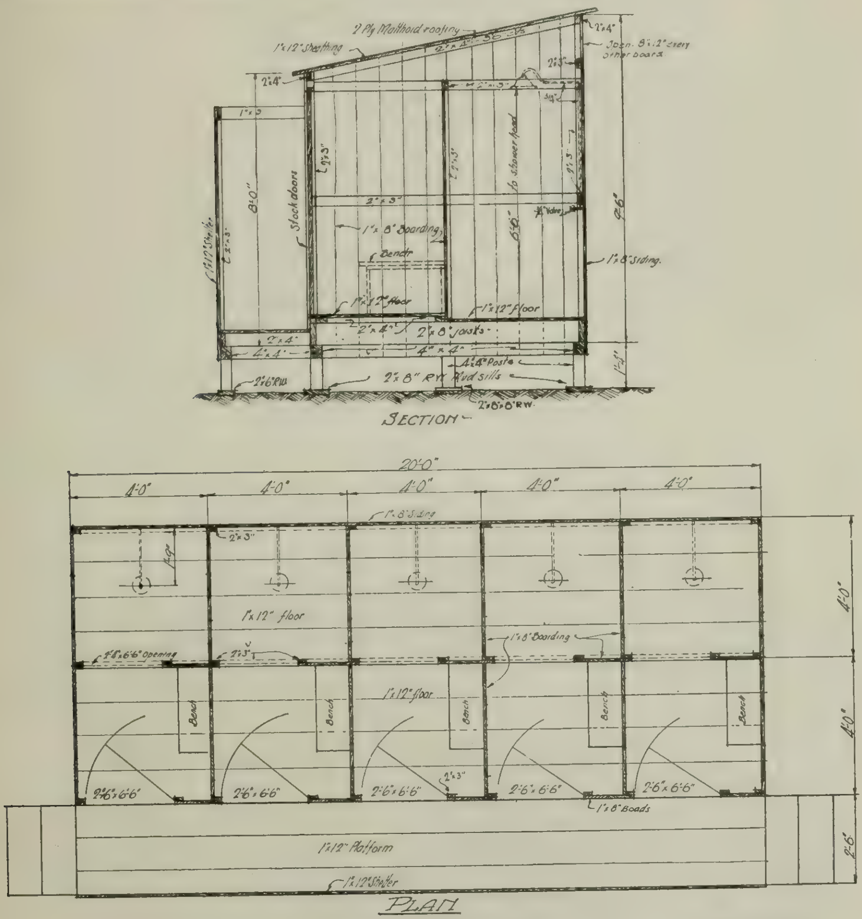
A model men's twelve-shower bathhouse, which was built under the supervision of the Commission on the Durst ranch, Wheatland.



Picture of a five-shower bathhouse for women, built under the supervision of the Commission on the Durst ranch, Wheatland.

The estimated cost of a women's toilet as shown in Figure 25 (page 29), is as follows:

	San Francisco	Sacramento	Fresno	Los Angeles
Material	$12 12	$14 90	$15 10	$12 00
Labor	8 00	9 00	9 75	7 00
Total	$20 12	$23 90	$24 85	$19 00



WOMENS BATH HOUSE:
5 SHOWER TYPE

FIG. 35

Diagrams of bathhouse shown in picture number 34 (page 38).

The following is a bill of material for a women's toilet with separate entrances, as shown in Figure 26 (page 31):

1 piece 4" x 6"—14' redwood skids.
1 piece 4" x 4"— 7' redwood center skid.
3 pieces 4" x 4"— 6' Oregon pine girders.
3 pieces 2" x 4"—12' Oregon pine rafters, plates, etc.
5 pieces 2" x 3"—12' Oregon pine plates, etc.
5 pieces 1" x 12"—14' Oregon pine, s. 1 s., for roof and floor.
3 pieces 1" x 12"—14' redwood for shelter.
10 pieces 1" x 12"—16' redwood, s. 1 s., for sides.
14 pieces 1" x 3"—16' redwood battens, etc.
7 pieces 1" x 6"—14' Oregon pine tongue and groove partitions.
1 piece 1" x 8"— 6' redwood over screen front.
3 pieces 1" x 8"—10' redwood between doors and at ends.
1 piece 1" x 6"—14' redwood vent stack.
1 piece 1" x 4"— 8' redwood vent stack.
1 piece 1½" x 6"— 6' redwood, for seat.
2 pieces 1" x 14"— 1' 8" redwood, seat cover.
2 doors, 2' 4" x 6' 6" plank, or 1¼" redwood stock doors.
2 pair 6" strap hinges for doors.
2 heavy spring coils (12" or 14") for doors.
2 pair 3" T hinges for seat covers.
6 ⅝" x 9" bolts, skids to girders.
4 ¾" x 6" eye bolts, 2" eye; one each end through skids.
50 square feet 2-ply Malthoid, or equal, roofing; or shingles or corrugated iron may be used.
16 square feet wire screen, either copper, galvanized, or No. 16 black wire screen.

The estimated cost of this toilet is as follows:

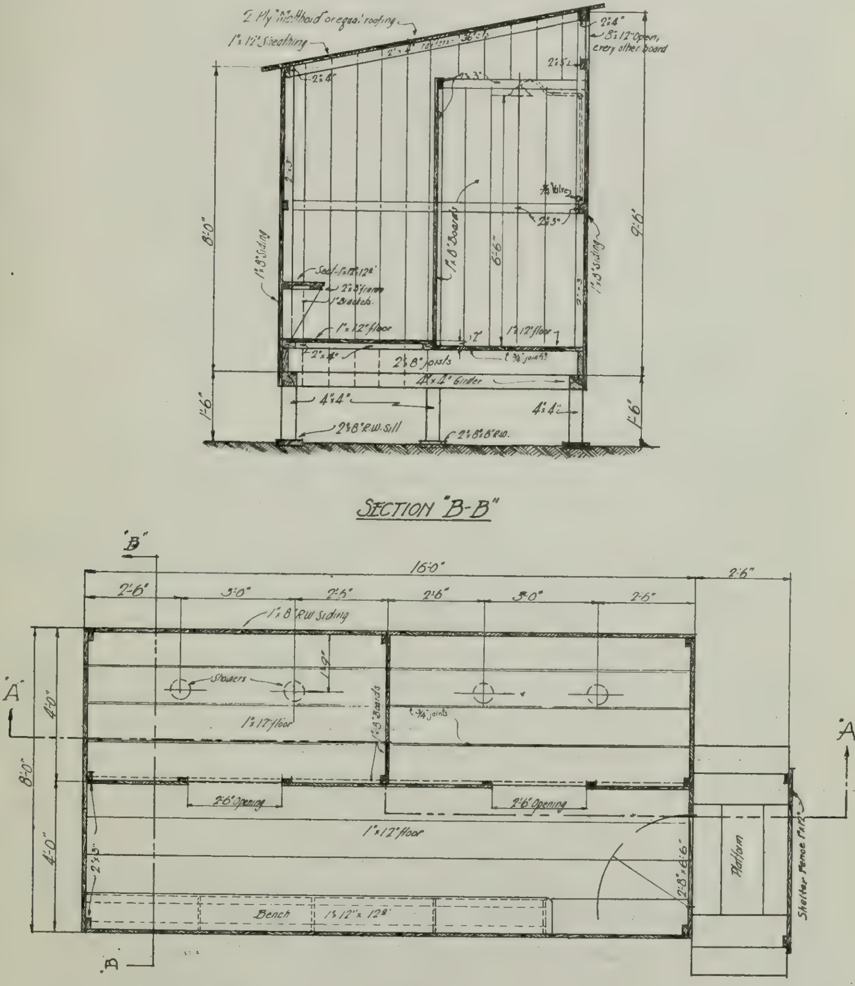
	San Francisco	Sacramento	Fresno	Los Angeles
Material	$15 59	$19 88	$20 62	$15 02
Labor	9 00	10 00	10 60	6 00
Total	$24 59	$29 88	$31 22	$21 02

Figures 29 and 30 (pages 34 and 35) show a picture and diagrams of a portable toilet for field use, built under the Commission's supervision at the Horst ranch, Wheatland. This is suitable for use in hop fields, fruit ranches, etc. The bill of material for the portable toilet, as shown in Figure 30, is as follows:

2 pieces 4" x 6"— 5' redwood skid.
1 piece 4" x 4"— 4' redwood skid center.
2 pieces 4" x 4"— 6' 6" Oregon pine girders.
6 pieces 2" x 4"— 7' Oregon pine studs.
6 pieces 2" x 4"— 8' Oregon pine plates, etc.
3 pieces 2" x 3"—12' Oregon pine plates.
2 pieces 1" x 6"—12' tongue and groove, for seat front.
6 pieces 1" x 12"— 8' redwood boards, s. 1 s., behind seat.
6 pieces 1" x 3"— 8' redwood battens behind seat.
1 piece 1½" x 20"— 4' redwood, clear, for seat, s. 1 s.
1 piece 1½" x 6"— 4' redwood for seat, s. 1 s.
2 pieces 1" x 14"— 1' 8" Oregon pine, s. 1 s., seat lid.
1 plank door 2' 4" x 6' 6".
1 pair 6" strap hinges for door.
1 heavy spring coil for door (12" or 14").
2 pair 3" T hinges for seat lid.
4 ¾" x 6" eye bolts, 2" eye; one each end.
6 ⅝" x 9" bolts; skids to girders.
10 square feet galvanized wire screen for top
150 square feet canvas or burlap.

The estimated cost of this portable toilet is as follows:

	San Francisco	Sacramento	Fresno	Los Angeles
Material	$11 50	$11 80	$12 05	$10 80
Labor	7 00	8 00	8 50	6 00
Total	$18 50	$19 80	$20 55	$16 80



SECTION "B-B"

PLAN

MENS BATH HOUSE
4 SHOWER TYPE

FIG. 36

A men's four-shower bathhouse built under the supervision of the Commission at the Horst ranch, Wheatland.

Figure 31 (page 36) shows a fly-proof toilet, knock-down system, suitable for use in temporary camps. The corners marked "A" and "B" show the bolted connections, which can easily be taken apart and put up again.

The bill of material for a two-hole toilet of this type is as follows:

2 pieces 4" x 6"— 5′ 6" redwood skids.
1 piece 4" x 4"— 5′ 6" redwood skid.
2 pieces 4" x 4"— 6′ 6" Oregon pine girders.
4 pieces 2" x 4"— 8′ Oregon pine studs.
4 pieces 2" x 4"— 9′ Oregon pine studs.
5 pieces 2" x 4"— 8′ Oregon pine plates, etc.
3 pieces 2" x 4"— 7′ Oregon pine rafters.
4 pieces 2" x 3"— 6′ Oregon pine plates.
20 pieces 1" x 12"— 8′ redwood, s. 1 s., sides and floor, and 2 pieces 10′.
2 pieces 1" x 12"—10′ redwood, s. 1 s., sides and floor.
2 pieces 1" x 12"—10′ redwood, s. 1 s., sides.
24 pieces 1" x 3"— 8′ redwood battens and 4 pieces 10′.
2 pieces 1" x 6"—12′ Oregon pine tongue and groove for seat front.
1 piece 1½" x 20"— 4′ redwood, clear, for seat.
1 piece 1½" x 6"— 4′ redwood for seat.
2 pieces 1" x 6"— 7′ Oregon pine, s. 1 s., for stack.
1 piece 1" x 4"— 7′ Oregon pine, s. 1 s., for stack.
2 pieces 1" x 14"— 1′ 8" Oregon pine for seat lids
1 piece 1" x 8"— 4′ redwood over screen front.
1 door, 2′ 4" x 6′ 6", made up of planks, or may be stock door.
3 6′ sheets corrugated galvanized iron roofing.
1 pair 6" strap hinges for door.
1 heavy spring coil (12" or 14").
2 pair 3" T hinges for seat covers.
4 ⅝" x 9" bolts; skids to girder.
4 ¾" x 6" eye bolts; 2" eye; one each end through skid.
8 corner connections marked "B" with 16 ⅝" x 3" bolts.
6 rafter connections marked "A" and "A-1" with 6 ⅝" x 3" bolts.

The estimated cost of a two-hole toilet, knock-down system, as shown in figure 31 (page 36), is as follows:

	San Francisco	Sacramento	Fresno	Los Angeles
Material	$20 60	$23 10	$23 90	$20 15
Labor	8 00	8 50	9 00	6 00
Total	$28 60	$31 60	$32 90	$26 15

VIII.

Bathing Facilities.

1. There should be facilities for bathing; tubs, showers or a shelter built on a stream, where persons may bathe in privacy.

2. If showers or tubs are used, there should be a sufficient number to provide one for every twenty persons.

Showers are far preferable to tubs, as they are cheaper to install and are more sanitary. Furthermore, a shower can accommodate more bathers.

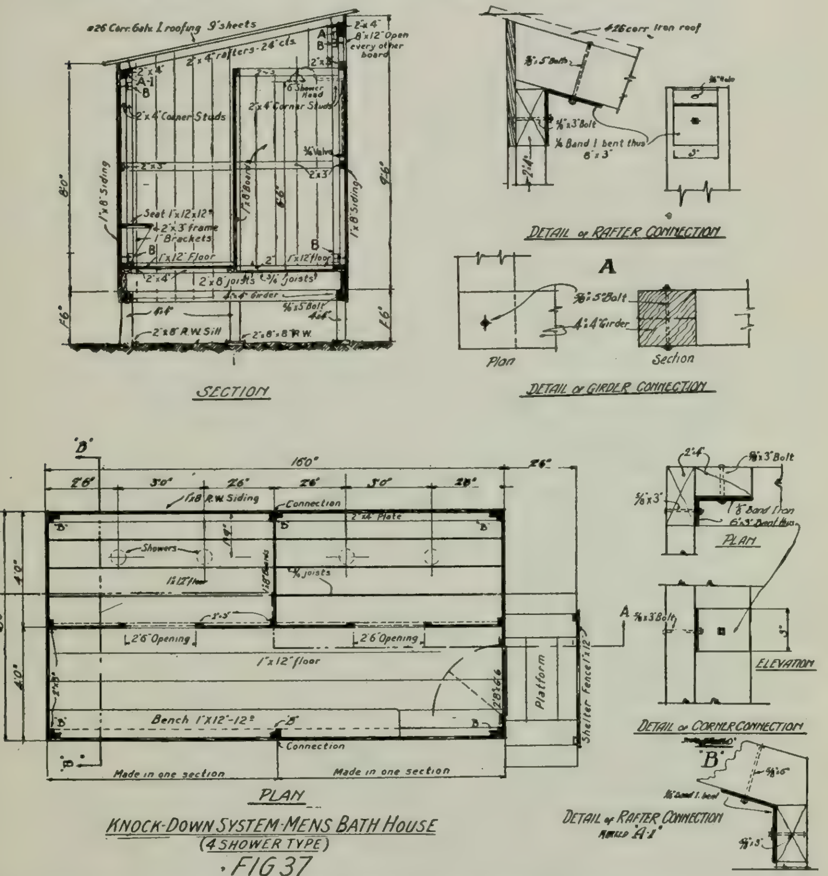
3. In camps where women are employed, separate bathing facilities should be provided and marked, "For Women Only."

4. In winter camps warm water should be provided for bathing purposes.

5. In every case the places for bathing should be conveniently near the sleeping quarters.

6. The waste water from baths should be properly drained away so as to avoid the formation of stagnant pools.

7. All tubs and bathhouses should be kept clean.



KNOCK-DOWN SYSTEM-MENS BATH HOUSE (4 SHOWER TYPE)

FIG 37

A model four-shower bathhouse, knock-down system. The corners marked "A" and "B" show the bolted connection, which can easily be taken apart and put together again.

Figure 32 shows a men's six-shower bathhouse at the State Highway Camp, Shingle Springs, which was built under the supervision of the Commission. The cost of this bathhouse, including a wooden tank of 1,080 gallons capacity, was as follows (see page 37):

Material	$50 89
Labor	32 15
Total	$83 04

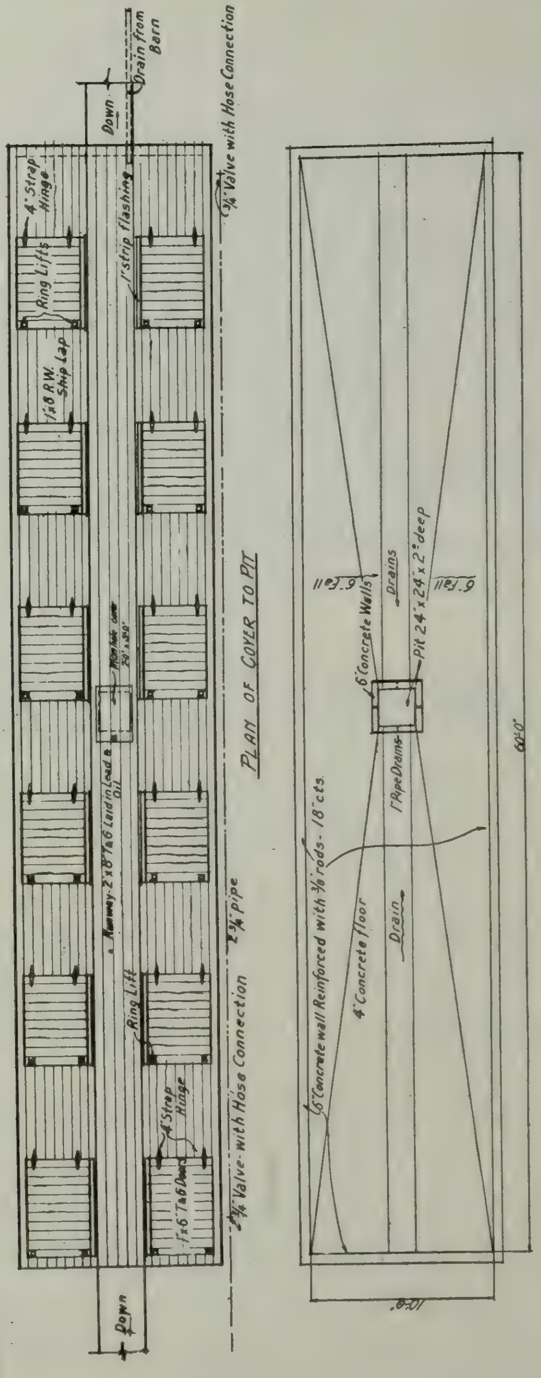


FIG 38

A concrete fly-proof composting pit. The capacity of this pit is 2,700 cubic feet, and will store the offal of ten horses for a period of six months.

Figure 33 shows a men's model twelve-shower bathhouse, which was built under the supervision of the Commission on the Durst ranch, Wheatland, at the following cost (page 38):

Lumber	$100 00
Pipe and fittings	31 74
Labor (carpentry)	24 00
Labor (plumbing)	12 00
Total	$167 74

Figures 34 and 35 (pages 38 and 39) show the picture and diagram of a five-shower bathhouse for women, also built under the supervision of the Commission on the Durst ranch, Wheatland. The following is the cost of same:

Lumber	$55 00
Pipe and fittings	13 22
Labor (carpentry)	17 40
Labor (plumbing)	6 00
Total	$91 62

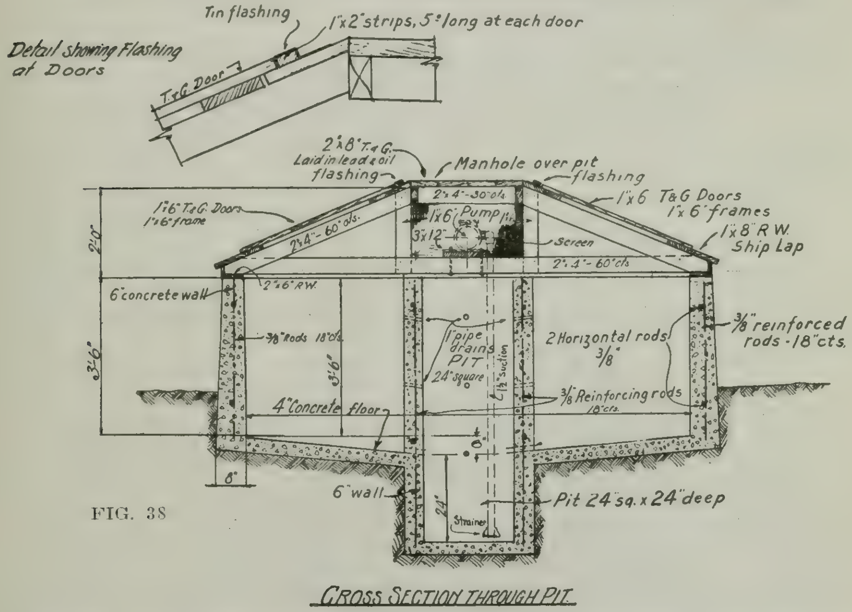

Tin flashing
1"x2" strips, 5' long at each door
Detail showing Flashing at Doors
T.&G. Door
2"x8" T.&G. Laid in lead & oil flashing
Manhole over pit
flashing
1"x6" T.&G. Doors 1"x6" frame
2"x4"-60" c/s.
2"x4"-30" c/s.
1"x6 Pump
3"x12"
Screen
1"x6 T&G Doors 1"x 6" frames
1"x8" R W. Ship Lap
2"x4"-60" c/s
2'0"
2"x6" R.W.
6" concrete wall
3/8" Rods 18" c/s
3'6"
3'6"
1" pipe drains PIT 24" square
1½" suction
2 Horizontal rods 3/8"
3/8" reinforced rods - 18" cts.
3/8" Reinforcing rods 18" cts.
4" Concrete floor
6"
6" wall
24"
Strainer
Pit 24" sq. x 24" deep
CROSS SECTION THROUGH PIT.

FIG. 38

A concrete fly-proof composting pit. The capacity of this pit is 2,700 cubic feet, and will store the offal of ten horses for a period of six months.

Figure 36 shows a four-shower men's bathhouse built under the supervision of the Commission at the Horst ranch, Wheatland, at the following cost (page 41):

Lumber	$24 50
Pipe and fittings	10 58
Labor (carpentry)	13 20
Labor (plumbing)	5 00
Total	$53 28

The following is the bill of material for a women's five-shower bathhouse, as shown in Figure 35 (page 39):

12 pieces 1″ x 12″—20′ Oregon pine, s. 1 s., floor.
20 pieces 1″ x 12″—12′ Oregon pine, s. 1 s., roof.
10 pieces 1″ x 12″—14′ redwood shelter.
5 pieces 1″ x 12″— 2′ 6″ for bench.
4 pieces 2″ x 8″—12′ redwood mud sill.
2 pieces 2″ x 6″—10′ redwood mud sill.
10 pieces 4″ x 4″—10′ Oregon pine underpinning.
4 pieces 2″ x 8″—10′ Oregon pine blocking between joists.
7 pieces 2″ x 4″—16′ Oregon pine joists, plates, etc.
8 pieces 2″ x 4″— 8′ Oregon pine rafters.
17 pieces 2″ x 3″—20′ Oregon pine studs, plates, etc.
10 pieces 1″ x 3″—10′ Oregon pine nailing strips.
40 pieces 1″ x 8″—10′ redwood siding, ship-lap.
34 pieces 1″ x 8″— 8′ redwood siding, ship-lap.
32 pieces 1″ x 8″—14′ redwood, s. 2 s., shower partitions.
6 pieces 2″ x 8″—16′ Oregon pine joists.
200 square feet 2-ply Malthoid roofing, or equal.
5 6″ shower heads, ¾″ connections; 5 ¾″ globe valves.
4 ¾″ tees; 7 ¾″ elbows; 5 pair 6″ strap hinges.
65 feet ¾″ galvanized iron pipe; 4 ¾″ caps.
5 stock doors, 2′ 6″ x 6′ 6″ x 1¼″.

The estimated cost of this bathhouse is as follows:

	San Francisco	Sacramento	Fresno	Los Angeles
Material	$72 82	$80 50	$82 10	$70 95
Labor	36 00	38 00	40 00	30 00
Total	$108 82	$118 50	$122 10	$100 95

The following is the bill of material for the four-shower men's bathhouse, shown in Figure 36 (page 41):

3 pieces 2″ x 8″—16′ redwood mud sills.
1 piece 4″ x 4″—12′ redwood posts.
3 pieces 4″ x 4″—16′ Oregon pine girders.
19 pieces 2″ x 3″—16′ Oregon pine plates, etc.
7 pieces 2″ x 8″—16′ Oregon pine joists.
8 pieces 1″ x 12″—16′ Oregon pine for flooring, s. 1 s.
5 pieces 2″ x 4″—20′ Oregon pine for rafters, joists, etc.
10 pieces 1″ x 12″—18′ No. 2 Oregon pine, s. 1 s., roof.
14 pieces 1″ x 8″—18′ No. 2 Oregon pine sheathing, s. 2 s.
52 pieces 1″ x 8″—10′ redwood ship-lap siding, s. 1 s.
30 pieces 1″ x 8″— 9′ redwood ship-lap siding.
1 piece 2″ x 12″—12′ Oregon pine for steps.
1 piece 1″ x 12″—12′ Oregon pine, s. 1 s., bench.
2 pieces 2″ x 3″—12′ Oregon pine bench frame.
5 pieces 1″ x 12″— 8′ redwood for shelter.
1 pair 6″ strap hinges.
4 6″ shower heads, ¾″ connections.
4 ¾″ globe valves.
3 ¾″ tees; 6 ¾″ elbows; 2 ¾″ caps.
50 feet ¾″ galvanized iron pipe.
144 square feet 2-ply Malthoid roofing, or equal; or shingles or corrugated galvanized iron may be used.
1 stock door, 2′ 8″ x 6′ 6″ x 1¼″

The estimated cost of this bathhouse is as follows:

	San Francisco	Sacramento	Fresno	Los Angeles
Material	$48 98	$59 24	$60 26	$47 96
Labor	28 00	30 50	33 00	26 00
Total	$76 98	$89 74	$93 26	$73 96

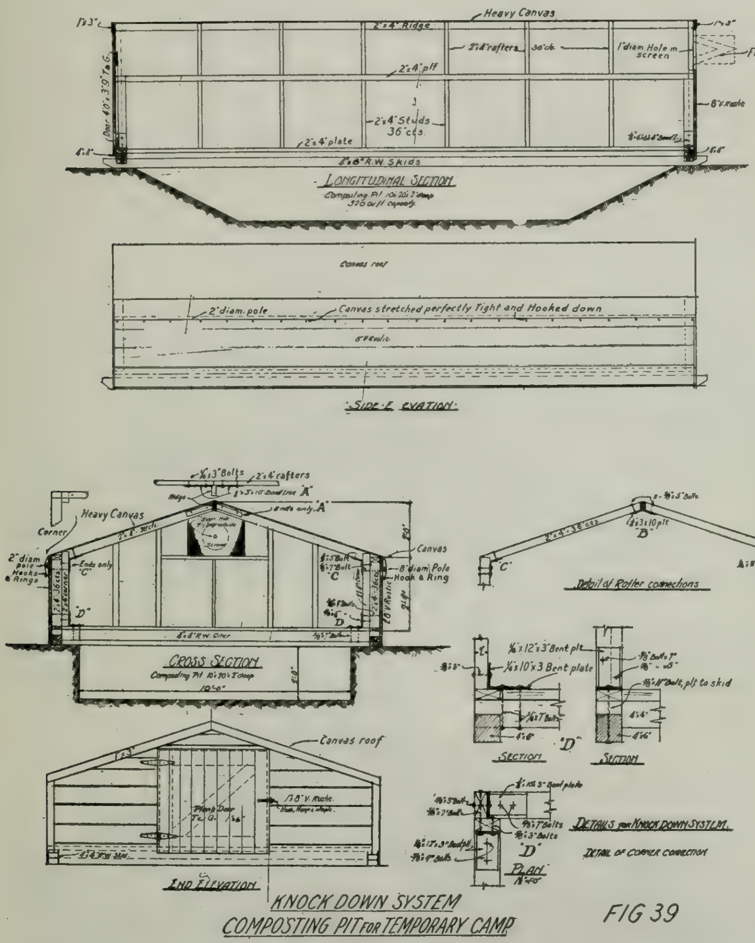


FIG 39

A composting pit, knock-down system, for temporary camps. This pit has a capacity of 320 cubic feet and will store the offal of ten horses for a period of twenty-one days.

Figure 37 shows a model four-shower bathhouse, knock-down system. The corners marked "A" and "B" show the bolted connections which can easily be taken apart and put together again. (See page 43.)

The bill of material for a bathhouse as shown in Figure 37 (page 43), is as follows:

3 pieces 2″ x 8″—16′ redwood mud sills.
1 piece 4″ x 4″—12′ redwood posts.
3 pieces 4″ x 4″—16′ Oregon pine girders.
12 pieces 2″ x 3″—16′ Oregon pine plates, etc.
7 pieces 2″ x 8″—16′ Oregon pine joists—solid bridging between joists at ends.
8 pieces 1″ x 12″—16′ Oregon pine for flooring, s. 1 s.
12 pieces 2″ x 4″— 8′ Oregon pine for studs.
14 pieces 2″ x 4″—16′ Oregon pine rafters, joists, plates, etc.
14 pieces 1″ x 8″—16′ Oregon pine sheathing (for shower partitions).
52 pieces 1″ x 8″—10′ redwood ship-lap siding, s. 1 s.
30 pieces 1″ x 8″— 9′ redwood ship-lap siding, s. 1 s.
1 piece 2″ x 12″—12′ Oregon pine for steps.
1 piece 1″ x 12″—12′ Oregon pine bench.
5 pieces 1″ x 12″— 8′ redwood for shelter.
1 pair 6″ strap hinges for door.
4 6″ shower heads, ¾″ connections.
4 ¾″ globe valves.
3 ¾″ tees; 6 ¾″ elbows; 2 ¾″ caps.
50 feet ¾″ galvanized iron pipe.
1 stock door 2′ 8″ x 6′ 6″ x 1¼″.
4 ⅝″ x 5″ bolts, girder connections.
12 corner connections marked "B," with 24 ⅝″ x 3″ bolts.
18 rafter connections marked "A" and "A-1," with 16 ⅝″ x 3″ bolts and 16 ⅝″ x 5″ bolts.
9 sheets No. 26 corrugated galvanized iron roofing, 9′ long.

The estimated cost of this bathhouse is as follows:

	San Francisco	Sacramento	Fresno	Los Angeles
Material	$68 47	$76 71	$72 26	$67 62
Labor	30 00	33 00	35 00	27 00
Total	$98 47	$109 71	$107 26	$94 62

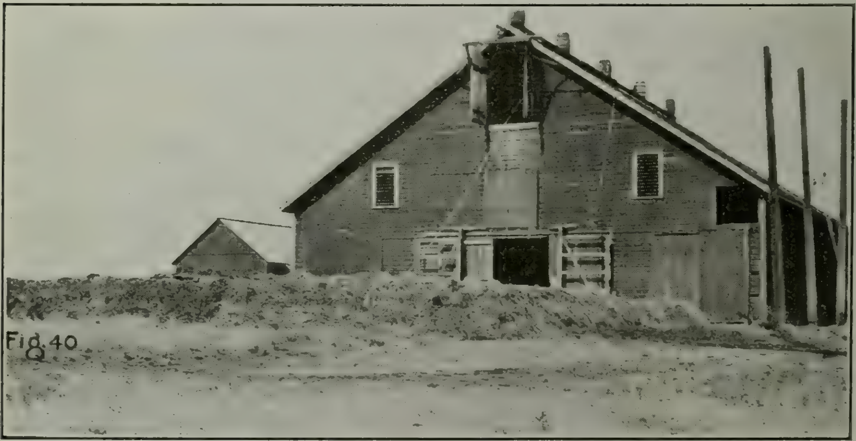


Fig 40

A pile of manure 50 feet long, 45 feet wide and 4 feet high. This manure is near the mess, cook and bunk houses.

IX.

Towels.

1. Roller towels, if used, should be changed frequently.
2. The use of individual towels, rather than the common towel, is strongly urged.
3. Paper towels are suitable and can be furnished at small expense.

X.

Flies and Manure.

1. The open manure pile should be eliminated.
2. Stables and stalls near camps should be kept thoroughly clean.
3. For permanent camps, cement floors with proper drainage for the stables are recommended. This eliminates the cracks common to board floors in which the offal collects and flies breed.
4. Manure should be disposed of daily, either by hauling it into the field and spreading it in thin layers on the land, or by placing it into a fly-proof composting pit, or by burning.

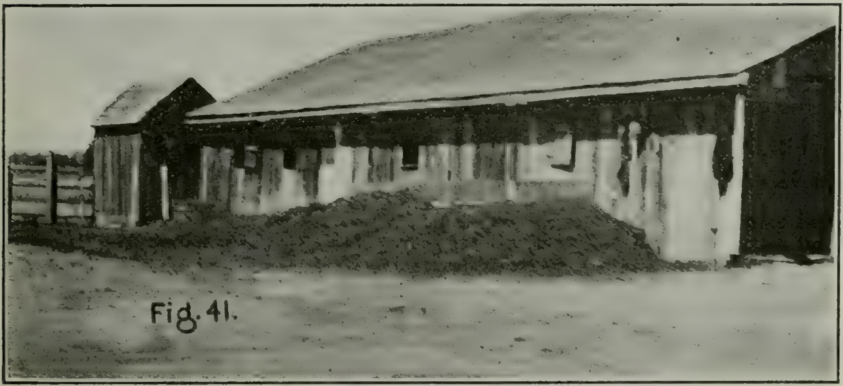


Fig. 41.

A pile of manure stacked up against the side of a barn, which is about 50 feet from the kitchen, mess-house and sleeping quarters. This pile of manure is not only a fly-breeding place, but may cause the side of the barn to cave in, or set fire to it.

Figure 38 shows a concrete fly-proof composting pit. The capacity of this pit is 2,700 cubic feet, and will store the offal of ten horses for a period of six months. The average horse produces 1½ cubic feet of manure per day, including bedding. (Pages 44 and 45.)

This composting pit will enable the farmer to save a great proportion of his manure from going to waste. A sump is provided to take care of the urine, which is the most valuable part of the excreta of animals. Urine is rich in nitrogen and in potash, which are successfully preserved with the dung in this pit. By means of a pump, as shown in Figure 38, the manure can be frequently moistened with the urine. Water should also be run into the pit to prevent the slow burning inside the pile, which destroys all of the fertilizing salts.

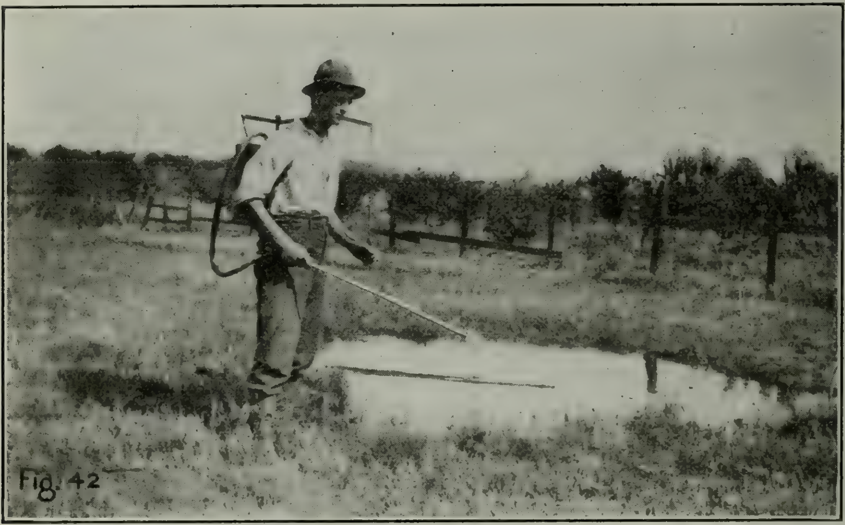


Fig. 42

A knapsack spray, five-gallon capacity, which is recommended for applying the oil on pools of stagnant water.

The bill of material for a composting pit as shown in Figure 38 (pages 44 and 45) is as follows:

308 lineal feet ⅜″ twisted steel for horizontal reinforcing.
350 lineal feet ⅜″ twisted steel for vertical reinforcing.
65 lineal feet ⅜″ twisted steel for vertical reinforcing in pit.
For concrete forms—
  168 pieces 1″ x 6″—10′ Oregon pine, s. 1 s.
  90 pieces 2″ x 4″—12′ Oregon pine.
Concrete—
  Floor—210 cubic feet=13 barrels cement, 4 cubic yards sand, 7½ cubic yards gravel.
  Walls—400 cubic feet=23 barrels cement, 7 cubic yards sand, 14 cubic yards rock.
4 pieces 2″ x 6″—20′ redwood plates and 1 piece 3″ x 12″—6′ pump foundation.
3 pieces 2″ x 6″—24′ redwood plates.
13 pieces 2″ x 4″—12′ Oregon pine truss.
13 pieces 2″ x 4″—10′ Oregon pine truss.
2 pieces 2″ x 4″—14′ Oregon pine truss.
3 pieces 1″ x 6″—10′ Oregon pine truss.
2 pieces 2″ x 4″—20′ Oregon pine runway.
4 pieces 2″ x 4″—22′ Oregon pine runway.
12 pieces 2″ x 4″—10′ Oregon pine rafters.
15 pieces 2″ x 8″—20′ Oregon pine tongue and groove floor for runway.
30 pieces 1″ x 8″—10′ redwood ship-lap top covering.
48 pieces 1″ x 6″—12′ Oregon pine tongue and groove for doors.
12 pieces 1″ x 2″— 5′ Oregon pine strips.
7 pieces 1″ x 6″—14′ Oregon pine for door frames.
12 pieces 1″ x 6″—10′ Oregon pine for door frames.
12 pairs 4″ strap hinges and 24 ring lifts.
12 pieces 1″ pipe 6″ long for weep holes for pit.

The cost of this fly-proof composting pit is as follows:

	San Francisco	Sacramento	Fresno	Los Angeles
Material	$245 60	$257 80	$256 10	$236 25
Labor	140 00	155 00	158 00	125 00
Total	$385 60	$412 80	$414 10	$361 25

Figure 39 shows a composting pit, knock-down system, for temporary camps. This pit has a capacity of 320 cubic feet and will store the offal of ten horses for a period of twenty-one days. (See page 47.)

The bill of material is as follows:

2 pieces 4" x 6"—22' redwood skids.
2 pieces 4" x 4"—12' redwood girders.
2 pieces 2" x 4"—12' Oregon pine plates.
2 pieces 2" x 4"—22' Oregon pine plates.
16 pieces 2" x 4"— 2' 6" Oregon pine studs (sides).
8 pieces 2" x 4"— 3' Oregon pine studs (ends).
4 pieces 2" x 4"— 4' Oregon pine studs (ends).
16 pieces 2" x 4"— 7' Oregon pine rafters.
1 piece 2" x 4"—22' Oregon pine ridge.
10 pieces 1" x 8"—22' pine rustic sides.
12 pieces 1" x 8"— 4' pine rustic ends.
2 pieces 1" x 8"—12' pine rustic ends.
2 pieces 1" x 8"—10' pine rustic ends.
2 pieces 1" x 8"— 8' pine rustic ends.
2 pieces 1" x 8"— 5' pine rustic ends.
4 pieces 1" x 6"—12' Oregon pine, s. 2 s., tongue and groove, No. 2, for door.
4 pieces 1" x 6"—10' Oregon pine for door frames.
356 square feet canvas for roof.
1 pair 4" strap hinges for door.
2 end gable irons marked "A."
6 rafter irons marked "B."
16 angles at rafter connection marked "C."
8 angles at corners marked "D."
6 ⅝" x 11" bolts; plates to skids.
4 ⅝" x 9" bolts; skids to girders.
12 ⅝" x 7" bolts for connecting parts.
16 ⅝" x 3" bolts for connecting parts.
44 ⅝" x 5" bolts for connecting parts.

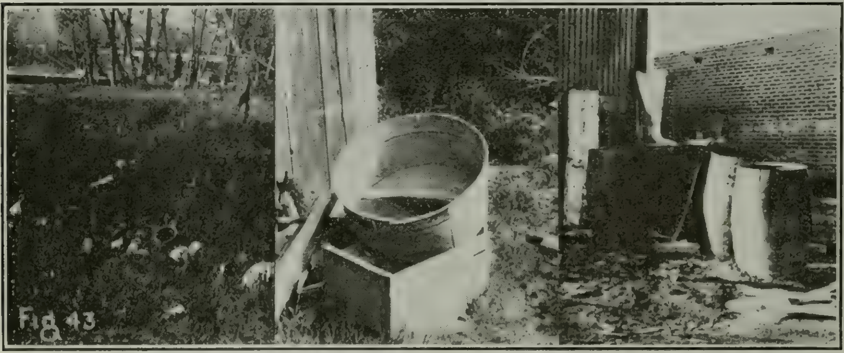
The estimated cost of this temporary composting pit is as follows:

	San Francisco	Sacramento	Fresno	Los Angeles
Material	$45 00	$54 70	$55 65	$46 85
Labor	35 00	40 00	47 00	32 00
Total	$80 00	$94 70	$102 65	$78 85

Figure 40 (page 48) shows a pile of manure 50 feet long, 45 feet wide and 4 feet high. This manure is near the mess, cook and bunk houses. Millions of flies breed here during the eight months this manure is kept, and hence the bunk, cook and mess houses swarm with flies. It has been found that a pile of horse manure weighing 500 pounds may contain about 300,000 fly maggots at the end of four days' exposure. Besides, from the standpoint of economy alone, this is a poor method of keeping manure, as a large portion of it is wasted by heating and leaching.

On the basis of prices charged for commercial fertilizers, it is estimated that the average value of manure annually produced by each horse or mule is $27; by each head of cattle, $19; by each hog, $12, and by each sheep, $2. Fifty per cent of the value of manure is lost if kept as shown in Figure 40. (See page 48.)

Figure 41 shows a pile of manure stacked up against the side of a barn, which is about 50 feet from the kitchen, mess house and sleeping quarters. This pile of manure is not only a fly-breeding place, but may cause the side of the barn to cave in, or set fire to it. (See page 49.)



Tin cans and barrels in which water may stand, affording breeding places for mosquitoes.

XI.

Mosquitoes and Malaria.

Mosquitoes breed in stagnant water collected in pools, irrigation ditches, marshes, barrels and other receptacles left uncovered. Mosquitoes carry malaria from the infected to the non-infected, and a laborer suffering from malaria, or badly bitten by other types of mosquitoes, is only half efficient. Hence it pays to eliminate the mosquito.

1. In regions where mosquitoes are numerous, No. 16 or 18 wire mesh should be used for screening the bunk houses to keep out the mosquitoes.

2. Where tents are used for sleeping quarters in malarial regions, it is recommended that the occupants use mosquito nets over their beds to insure protection.

3. If areas of stagnant water are present about the camp, the surfaces should be treated, once every ten days, with a mixture of crude oil and kerosene, half and half, to avoid the breeding of malaria-bearing mosquitoes.

Figure 42 shows a knapsack spray, five-gallon capacity, which is recommended for applying the oil. (See page 50.)

Figure 43 shows tin cans and barrels in which water may stand, affording breeding places for mosquitoes.

XII.

Sanitation Service.

1. Each large camp should have one or more able-bodied men, whose entire time should be devoted to the cleaning up of the camp.

2. The cooperation of every person in the camp is needed for securing the best results.

3. It is the duty of every employer to obey conscientiously the law requiring him to report immediately to the local health officer all communicable diseases, such as typhoid, smallpox, etc.

4. In camps of 50 or more persons, a fly-proof and mosquito-proof tent or house should be provided for receiving the sick.

See page 54 for camp placard.

SANITARY RULES.

THE COMMISSION OF IMMIGRATION AND HOUSING OF CALIFORNIA MAKES THE FOLLOWING SUGGESTIONS TO MEN IN LABOR CAMPS:

1. Use the toilets. Do not urinate or defecate on the camp grounds; it endangers your own health and that of your fellow workmen.

2. Put your cast-off clothing—shirts, sox, trousers, etc.—in the containers provided for them.

3. Keep your bunks clean. Do not spit on the floor of the sleeping quarters. Throw old papers and tobacco tins in the garbage cans.

4. Cooks, flunkies and workmen must keep screen doors on eating quarters closed.

5. Keep your windows and tent flaps open to admit plenty of fresh air to your sleeping quarters.

6. Air all bedding and blankets at least once a week.

7. It is safer to use a drinking cup of your own.

8. Make proper use of the baths, toilets and other sanitary features provided for you.

9. Obey the rules of sanitation. Cooperate with your employer and with this Commission in bettering the sanitary conditions in labor camps.

WE HEARTILY AGREE WITH THESE RECOMMENDATIONS, AND TRUST THAT OUR MEN WILL ASSIST US IN KEEPING THIS CAMP CLEAN AND LIVABLE BY FOLLOWING THE ABOVE SUGGESTIONS.

(Owner's Signature) ------------------------------

The above is a reproduction of a placard which we should be pleased to send you, to be posted at convenient places in your labor camp. Let us know how many you can use, and we shall send them without cost to you.

COMMISSION OF IMMIGRATION AND HOUSING
OF CALIFORNIA,
Underwood Building, 525 Market Street,
San Francisco, California.

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II.

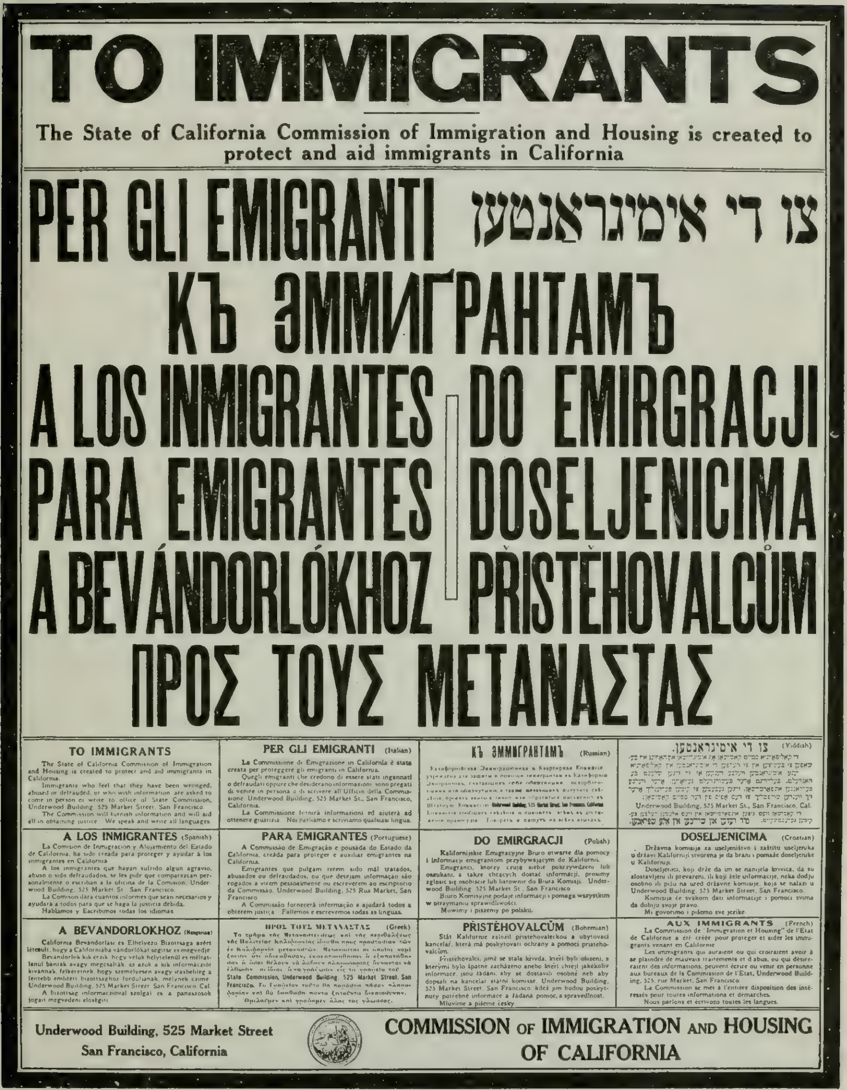
BUREAU OF COMPLAINTS.

After two years' experience, the Commission is convinced that in some respects the bureau of complaints is the most important department of its work. In the first report the following policy was announced: ''Not to theorize concerning the problems and difficulties met with by newly-arrived immigrants, but to find out from the immigrants themselves what these facts and problems are.'' The complaint bureau was organized, therefore, not merely for the purpose of securing justice for exploited individuals, but also for the purpose of coming into contact with as many immigrants as possible in order to learn from them the common or general problems and evils which need attention and correction. It is in this latter connection that the Bureau has rendered particularly valuable service. It has been a sort of clearing-house and has furnished evidence which sometimes conclusively supports and sometimes conclusively disproves preconceived theories, and which often discloses entirely new phases of the immigration or assimilation problems. And, from the study of such evidence, the work of prevention develops—the planning of ways and means to remove the pitfalls from the immigrant's path to assimilation and citizenship. Thus, the complaint bureau's work is constructive as well as corrective. It involves not merely the treatment of symptoms but the diagnosis of diseases, and occasional cures.

At the time this report goes to press—somewhat delayed by the compilation of statistical tables—7,369 complaints and applications for advice and assistance have been handled by this Commission. In the course of dealing with these thousands it has been possible to sort out several fundamental difficulties or snags encountered by immigrants and to devise some means for overcoming them. In the course of investigating the hundreds of complaints against land companies, for instance, it became apparent that the usual source of trouble is to be found in the misunderstandings resulting from hasty sales, advertising pamphlets, and oral representations regarding the land and the contracts of sale. So many immigrants read and speak English imperfectly that mutual misunderstandings often result, and most foreigners, used to the very strict publishing laws of their native countries, rely implicitly on every statement in printed advertisements, not excepting the rather exaggerated "sales talk" which the native American has learned to discount or disregard; besides, in some cases, the advertisements were proved to be actually false, or, at least, misleading. Consequently, the Commission was able to persuade the legislature of 1915 to amend the Penal Code, section 654*b*, so as specifically to prohibit any misleading or exaggerated statements in connection with land offered for sale.

To further protect these handicapped immigrants, whom every one seems so anxious to move from the city "back to the land," an arrangement has been made to furnish them with free general information concerning agricultural lands, and free reports on the value of any particular tract of which they are contemplating the purchase. This arrangement is described in detail in chapter VI, on page 318.

Evidence collected by this bureau also disclosed the fact that the Civil Code section requiring the father of an illegitimate child to contribute to its support is not furnishing any relief where immigrant women, or poor native American girls or women, are involved. These unfortunate mothers, usually unskilled, underpaid workers, who speak no English, do not know of this provision in the law, and if they do they are not able to employ attorneys. Furthermore, the type of men who seduce these almost helpless creatures are usually clever enough so to dispose of their property as to escape execution on any civil judgment. The Commission, therefore, attempted to prosecute a seducer of an immigrant girl under the Penal Code section, which makes failure to support a child punishable by both fine and imprisonment. The prosecution was successful in the three lower courts, but was reversed in the Supreme Court, it being held that the law applied only to legitimate children, although it seemed to be admitted there was more need of such a law in cases where parents were not lawfully married. This case, and several others investigated by the complaint bureau, were submitted to the last legislature and the law, Penal Code, section 270, was amended so as to include illegitimate children. Many poverty-stricken mothers who used to be turned away from the offices of district attorneys are now able to secure at least financial assistance from the fathers of their illegitimate children. Many social agencies, and especially charity hospital organizations, have already used this law to good effect, and it has been estimated that it will save the State some $50,000.00 annually in contributions to the support of illegitimate children.



TO IMMIGRANTS

The State of California Commission of Immigration and Housing is created to protect and aid immigrants in California

PER GLI EMIGRANTI

צו די אימיגראנטען

КЪ ЭММИГРАНТАМЪ

A LOS INMIGRANTES

DO EMIRGRACJI

PARA EMIGRANTES

DOSELJENICIMA

A BEVÁNDORLÓKHOZ

PŘISTĚHOVALCŮM

ΠΡΟΣ ΤΟΥΣ ΜΕΤΑΝΑΣΤΑΣ

TO IMMIGRANTS

The State of California Commission of Immigration and Housing is created to protect and aid immigrants in California.

Immigrants who feel that they have been wronged, abused or defrauded, or who wish information are asked to come in person or write to office of State Commission, Underwood Building, 525 Market Street, San Francisco.

The Commission will furnish information and will aid all in obtaining justice. We speak and write all languages.

PER GLI EMIGRANTI (Italian)

La Commissione di Emigrazione in California è stata creata per proteggere gli emigranti in California.

Quegli emigranti che credono di essere stati ingannati o defraudati oppure che desiderano informazioni sono pregati di venire in persona o di scrivere all'Ufficio della Commissione Underwood Building, 525 Market St., San Francisco, California.

La Commissione fornirà informazioni ed aiuterà ad ottenere giustizia. Noi parliamo e scriviamo qualsiasi lingua.

КЪ ЭММИГРАНТАМЪ (Russian)

צו די אימיגראנטען. (Yiddish)

Underwood Building, 525 Market St., San Francisco, Cal.

A LOS INMIGRANTES (Spanish)

La Comision de Inmigracion y Alojamiento del Estado de California, ha sido creada para proteger y ayudar à los inmigrantes en California.

A los inmigrantes que hayan sufrido algun agravio, abuso o sido defraudados, se les pide que comparezcan personalmente o escriban a la oficina de la Comision, Underwood Building, 525 Market St. San Francisco.

La Comision dara cuantos informes que sean necesarios y ayudará a todos para que se haga la justicia debida.

Hablamos y Escribimos todas los idiomas.

PARA EMIGRANTES (Portuguese)

A Commissão de Emigração e pousada do Estado da California, creáda para proteger e auxiliar emigrantes na California.

Emigrantes que pulgam terem sido mál tratados, abusados ou defraudados, ou que desejam informação são rogados a virem pessoalmente ou escreverem ao escriptorio da Commissão, Underwood Building, 525 Rua Market, San Francisco.

A Commissão fornecerá informação e ajudará todos a obterem justiça. Fallemos e escrevemos todas as linguas.

DO EMIRGRACJI (Polish)

Kalifornijskie Emigracyjne Biuro otwarte dla pomocy i informacyi emigrantom przybywającym do Kalifornii.

Emigranci, ktorzy czują siebie pokrzywdzeni lub oszukani, a także chcących dostać informacji, prosimy zglosić się osobiście lub listownie do Biura Komisji. Underwood Building, 525 Market St., San Francisco.

Biuro Komisyjne podaje informacji i pomaga wszystkim w otrzymaniu sprawiedliwości.

Mowimy i piszemy po polsku.

DOSELJENICIMA (Croatian)

Državna komisija za useljenišvo i zaštitu useljenika u državi Kaliforniji stvorena je da brani i pomaže doseljenike u Kaliforniji.

Doseljenici, koji drže da im se nanijela krivica, da su zlostavljeni ili prevareni, ili koji žele informacije, neka dodju osobno ili pišu na ured državne komisije, koja se nalazi u Underwood Building, 525 Market Street, San Francisco.

Komisija će svakom dati informacije i pomoći svima da dobiju svoje pravo.

Mi govorimo i pišemo sve jezike.

A BEVANDORLOKHOZ (Hungarian)

California Bevandorlasi és Elhelyezo Bizottsaga azért létesült, hogy a Californiába vándorlókat segitse es megvedje.

Bevándorlok kik érzik, hogy velük helytelenül es méltatlanul bántak avagy megcsalták, és azok a kik informácziót kivánnak, felkéretnek, hogy személyesen avagy irasbeliieg a lentebb említett bizottsághoz forduljanak, melynek czime Underwood Building, 525 Market Street, San Francisco, Cal.

A bizottság informáczióval szolgál és a panaszosok jogait megvédeni elősegiti.

ΠΡΟΣ ΤΟΥΣ ΜΕΤΑΝΑΣΤΑΣ (Greek)

State Commission, Underwood Building, 525 Market Street, San Francisco.

PŘISTĚHOVALCŮM (Bohemian)

Stát Kalifornie založil přistěhovaleckou a ubytovací kancelář, která má poskytovati ochrany a pomoci přistěhovalcům.

Přistěhovalci, jimž se stala křivda, kteří byli ošizeni, s kterými bylo špatně zacházeno anebo kteří chtějí jakékoliv informace, jsou žádáni, aby se dostavili osobně neb aby dopsali na kancelář státní komise, Underwood Building, 525 Market Street, San Francisco, kdež jim budou poskytnuty potřebné informace a žádaná pomoc, a spravedlnost.

Mluvíme a píšeme česky.

AUX IMMIGRANTS (French)

La Commission de "Immigration et Housing" de l'Etat de Californie a été créée pour protéger et aider les immigrants venant en Californie.

Les immigrants qui auraient ou qui croiraient avoir à se plaindre de mauvais traitements et d'abus, ou qui désireraient des informations, peuvent écrire ou venir en personne aux bureaux de la Commission de l'Etat, Underwood Building, 525, rue Market, San Francisco.

La Commission se met à l'entière disposition des intéressés pour toutes informations et démarches.

Nous parlons et écrivons toutes les langues.

Underwood Building, 525 Market Street
San Francisco, California

COMMISSION OF IMMIGRATION AND HOUSING
OF CALIFORNIA

Reproduction of poster, in twelve different languages, offering assistance to immigrants. These posters have been placed in railroad stations, in public buildings, on docks, and in conspicuous places in all immigrant centers throughout the State.

In many other instances the data and information gathered through the complaint bureau have been used to support arguments for proposed laws or in favor of the creation of private welfare institutions. Of these the "Dock Zone" law, printed on page 332, is deserving of special mention. It was draughted by the Commission and enacted by the last legislature to prevent in some degree the constant exploitation of newly-arrived immigrants at docks and stations. This power of restricting to licensed persons admission to docks where immigrants are being landed, can be used most effectively in warding off professional exploiters and fake charity workers when direct immigration to California ports increases.

Another example of the constructive service rendered by this Bureau is to be found in connection with the organization of a legal aid society in San Francisco (discussed in detail on page 103). The large number of civil cases which the Bureau was unable to arbitrate or settle, and wherein both destitute immigrants and native Americans were in need of free legal services, was used as the final evidence to crystalize a slowly developing demand among social service agencies and attorneys for a legal aid society similar to those in the larger eastern cities.

The bureau of complaints, by these exposures of corruption and exploitation, and by pointing out obvious remedies, has also been of inestimable value in educating the general public to the need of a domestic immigration policy—one of the most important functions of this Commission. The work of this department has in some measure furnished answers to the questions in the following extract from a recent paper by one of the Commissioners and has proved that the justification contained therein is not merely academic or theoretical:

> "A question which more than once we have had to answer, runs something like this: 'Why should the State devote special attention to the immigrant? Haven't we our own poor, our own exploited, among the native born? And aren't they just as worthy of protection and assistance as the alien? In fact, doesn't our first duty demand that we serve our own? Should not charity begin at home?'
>
> "Our State may justify itself from at least three different viewpoints. The act creating our Commission does not intend that any special favor be accorded the foreigner. But the stranger, ignorant of our laws, our customs, and often of our language, upon arrival finds himself beset by innumerable handicaps. The removal of these tends to place him upon an equality with those longer resident here. There is no favoritism in this; merely an attempt to establish a measure of justice.
>
> "Ordinarily, the immigrant is so situated that he becomes an easy prey to exploiters, that he finds it almost impossible to get on his feet economically; misfortune drags him into the overcrowded quarters of our slums, those breeding places of disease,

immorality, crime and ignorance; education in English and civics is almost impossible to attain. Such a man is not on the road to becoming a useful citizen. Indeed, unguided and unprotected, he is liable to become a menace. The correction of these evils is no more than a matter of our own self-protection. Our efforts primarily are in the direction of our own welfare. From this viewpoint, the immigrant is only an incident in our activities.

"But the immigrant is not merely a potential menace, from whom we must protect ourselves. With the proper encouragement, he may become a positive source of benefit to our civilization. Each man brings to our shores certain inherited racial and national talents as well as certain personal faculties which we may encourage and develop to our own advantage. The social settlement was the first institution in this land to give practical recognition to the fact that art and philosophy had not departed from the Greek, that music and sense of legal order had not deserted the Italian, that with the Jew there still remains a worship of the beauty of holiness, a reverence for pure family life, and a deep-seated belief that a nation which breaks faith is as much a sinner as is the individual who does violence to the moral law. The settlement first recognized the valuable contributions that might be made to our culture by immigrants from Germany, from Russia, from England, from France and from the homes of the Norsemen; yes, even from the pettiest of distant lands. And advisedly we might take the cue from the settlement in this respect, to do all within our power to bring out the latent possibilities from even the humblest of the strangers within our gates. Our country, in its early history, borrowed ideals and practices from all peoples, both ancient and modern. Is it not conceivable that the descendants of those who contributed thus might still have something to give?

"The State, then, in directing some attention toward the immigrant, is justified in three ways: First, by removing handicaps in the path of the stranger, it tends to place all upon an equality of opportunity; then, by protecting and aiding the foreigner, it most wisely seeks the welfare of the whole commonwealth; and finally, in encouraging the development of latent racial and personal talents, the State brings out valuable contributions to our culture.

"With wise minimum social, economic, educational and legal standards determined and enforced, we make impossible the existence of many of those practices and habits which are repugnant to our civilization. The immigrant crowds into hovels, thus endangering our health and our economic structure. Well, enforce our five hundred cubic-foot law and other housing regulations, and he must be half-way decent. The alien competes unfairly by throwing his women and his children into the stream of labor. Then bring to bear upon him our compulsory education law and our laws governing the employment of women and minors. The foreigner participates in corrupt politics and overloads our courts. Possibly our taking corruption out of our politics and putting more justice into our courts might remedy much of this.

"Another by-product flowing from an established domestic policy of immigration is this: Whatever we do, with the immigrant directly in mind, works to the advantage of our whole community.

> If we establish better schools for immigrants, we raise the whole tone of our educational system. If we put out of business and behind the bars the real estate shark who preys upon the alien, the employment agent who misrepresents and splits fees, the crooked notary and the shyster lawyer, and the white slaver, to that extent do we protect our native-born. If we prevent the foreign-born from overcrowding, from exploiting his women and his children, by the same effort we enforce these laws in regard to our own people. That is why we sometimes wonder why we are called a Commission of Immigration. In our effort to improve the condition of one element in our population, we tend to elevate the whole mass."

Newspaper editorials, local magazine articles, communications from clubs, and individuals, offers of co-operation from various and unexpected sources—all go to prove the fact that the complaint bureau has exposed some real problems; that gradually people are becoming eager to make amends for their long neglect; and that there is a growing desire to substitute for the *laissez faire* attitude toward the problem of immigrant assimilation some such constructive policy as that outlined in these quoted paragraphs. District attorneys, police officials, health officers, naturalization officers, and others who come in contact with many immigrants in trouble, have stated in cases handled by this bureau that they are coming to realize that immigrants are handicapped in various ways and that something more corrective than mere punishment is needed for immigrant offenders, and that more sympathetic and conscientious treatment is due immigrants who have themselves been wronged. One official, for example, admitted that he had been in the habit of "not wasting much time with the investigation or prosecution of complaints brought by immigrants because it was hard to understand their 'lingo,' and they took up so much time that he usually advised them to forget their troubles and go back to work." But this same official co-operated with the complaint bureau in prosecuting several cases of defrauded immigrants and today he is an ardent advocate of the theory that his former treatment of such cases made anarchists or criminals of potential, valuable citizens, and he is enthusiastic about evening classes in English and citizenship—or any measures looking toward the economic and civic assimilation of our foreign-born population.

(A) ATTITUDE OF IMMIGRANTS.

The attitude of the immigrants toward the work of the bureau of complaints and the change that the bureau itself has wrought in their attitude toward the government and American institutions in general, are both hopeful indications of the further usefulness of this branch of the Commission's work. Time and again an immigrant who has been aided in securing long-deferred justice, returns to the office, bringing some of his countrymen who have also been exploited or defrauded. These friends are always introduced with an air of pride that betokens a sort of newly-awakened civic consciousness and a wholesome feeling of responsibility for the proper enforcement of the laws. Having had their own wrongs righted, these people respond with a spontaneity that seems almost incredible to less emotional native Americans, and frequently waning faith in their dreams of American liberty and democracy is renewed almost at once. They feel that the State is "playing square" with them, as one expressed it, and that they, in turn, must shoulder the responsibilities of citizenship.

Investigator and interpreter taking evidence and interviewing immigrants concerning a complaint filed by several of their number. In Sacramento branch office of the Commission.

Naturally, some trivial and unfounded complaints are filed with the bureau, but the number of these is not great. Every social agency, governmental or private, has chronic complainers and "repeaters" to contend with, and it is not to be expected that none should be found among immigrants—who are so often subjected to harsh and prejudiced treatment that they become over-suspicious or discouraged. The bureau always attempts to deal tactfully with such complainants but they meet with small encouragement in their grievances.

Although the bureau has come in direct contact with only some six thousand immigrants, three or four times this number have been reached through those who have been directly aided. News of such work spreads rapidly through the gossip and newspapers of the "foreign colonists," and much intangible good is accomplished that can not be tabulated. The people who come to the office are urged to attend night school if they speak no English, or urged to become citizens if they are still aliens, and all are urged to use free public employment agencies and to be wary in buying land and in all business dealings. Through many enthusiasts thus appealed to, such constructive propaganda work is constantly being carried on among immigrant groups.

(B) OFFICE ORGANIZATION.

The procedure described in the first annual report is still followed in handling complaints. As the department has become more of an established institution it has been possible to develop better co-operation with other departments of the state government and with various municipal officials. Consequently results are often achieved much more quickly through the direct jurisdictional powers of these other departments; yet the bureau still carefully investigates each case, collecting all evidence possible and following it up to final disposition wherever practicable.

With the passing of time, and as a result of consistent publicity, it has not been necessary to advertise so widely or to "go out after business." Yet, this work of the Commission, like that of the labor camp and other departments, is still governed by a policy that is not satisfied with watchful waiting. The Commission is opposed to the practice of so many public agencies which open up an office, prominently indicated by an impressive sign-board, and then patiently wait, avoiding effort when possible. The sign, as reproduced on page 97, is still displayed throughout the State, but in addition the Commission's investigators have actually sought out many of the complaints. The bureau does not purpose to wait to be urged by immigrants clamoring for justice or for opportunities for education; rather does it intend to thrust these opportunities upon them. The organic act directs the Commission to unearth and investigate immigrant exploitation, and, though inviting criticism from some quarters, it persists in going about this work by advertising its wares in the manner known to successful commercial enterprises. As has been pointed out in the first part of this chapter, these complaints are not sought out for the purpose of making destructive criticisms, but for the purpose of indicating needed reforms and making constructive improvements.

As indicated in the table on page 117, the Sacramento branch office is now far in the lead as to the number of complaints handled. The rapid growth of this office can be attributed to several causes. Sacramento is the center for immigrant migratory agricultural and camp workers in the valley, and the office is located on the thoroughfare frequented by all these people. This class of immigrants seems to be more open to exploitation than the more settled resident class in San Francisco; furthermore, the immigrant groups are more scattered and have no common gathering place in this latter and larger city. The office in San Francisco is not, of course, devoted exclusively to the handling of complaints, as is the one in Sacramento; and, being located in an office building, it is not so accessible. Finally, there are fewer public and private social or charity agencies in Sacramento.

However, the Commission realizes that it is not meeting all the needs in San Francisco, and it is to be earnestly hoped that the legislature will eventually grant an appropriation for the maintenance of small branch complaint offices in the more densely populated immigrant centers. Oakland, also, should have a separate office to handle the complaints of its rather large immigrant population.

As the result of the experience in Sacramento, and because so many complaints have come, incidentally, from San Joaquin county, a part-time office has recently been opened in Stockton. The Commission's head investigator in Sacramento spends every Friday and part of Saturday there in a small store space on the street level, similar to the Sacramento office. Within the first three weeks 41 complaints have been filed in this office. It seems clear, therefore, that offices should be maintained in all the interior cities, such as Fresno, Chico, and Bakersfield, which are frequented by migratory immigrants, and which contain compact, easily-reached immigrant colonies. The Commission's appropriation is not large enough to maintain so many offices, but it is hoped that the Stockton experiment will prove the necessity for such branch offices of all the various industrial and welfare departments of the state government and that joint offices can be opened and maintained by all these departments, none of which are now represented in the rapidly-growing cities mentioned above. Deputations from some of these cities have already petitioned for such offices, and it would seem that they are justified in their assertions that these newer communities are in need of preventive work as much as or more than the larger cities.

(C) NEED OF LEGAL AID SOCIETIES, ETC.

The complaint bureau still has difficulty in properly disposing of complaints where no amicable adjustment can be reached and which can not be referred to the jurisdiction of public officials. The following statement from last year's report is reiterated in the hope that eventually every community of any size will make provisions for handling such matters: "The machinery for law enforcement where public officials can intervene was usually found to be adequate, but there is a deplorable lack of private organizations to which needy immigrants can be referred when public officials are without power to render aid. Particularly is there a great need for legal aid societies or public defenders and public prosecutors to handle civil cases in court for immigrants (as well as for needy citizens). In such cases the Commission had to avoid sending complaints to any particular attorneys, as the State can not assume such responsibility or subject itself to the possible criticism of showing favoritism. Yet it is an established fact that the immigrant usually falls into the clutches of unscrupulous attorneys who have their offices in or near foreign colonies. The office of the public defender in the city of Los Angeles co-operated with the Commission in taking over the civil cases, but elsewhere there is no such official, or legal aid societies, and the Commission could only refer complainants generally to private attorneys and do what it could, with propriety, to keep them out of the hands of 'shysters.' "

Early in 1915, in accordance with the express direction of the Commission's organic act, a movement was begun in San Francisco to arouse interest in a legal aid society. Within the last few weeks this movement culminated in a general meeting, called by a justice of the appellate court in co-operation with the Commission. The Bar Association, and practically every social, religious and charitable organization was represented. After a discussion of the hundreds of cases wherein free or inexpensive legal aid was needed, and which had annually come to the notice of the organizations represented, it was unanimously resolved that a representative, nonsectarian legal aid society be formed as soon as possible. A committee of fifteen, on which the Commission is represented, was selected and given definite power to organize such a society and raise funds for its support. This committee is now drawing up plans for organization and devising ways and means for financial support.

Within the year it is planned to start similar organizations in Sacramento, Stockton, and perhaps Oakland—in each of which cities there is proportionately as great a need in this connection as in San Francisco.

The problem of handling destitute immigrants without employment, referred to in last year's report, should be made considerably easier by the free public employment offices established by the legislature of 1915. These offices are to be opened in February, 1916. Moreover, in its own work, done at the request of the Governor, last winter and during the present fall and winter, with regard to the relief of destitute unemployed, the Commission has endeavored to persuade all cities and towns to establish temporary committees or organizations to which cases of destitution might be referred during the hardest months. (See page 327 for a detailed report of this work.)

(D) SUMMARY AND CAUSES OF COMPLAINTS.

As a matter of convenience and in order to distinguish the more serious complaints from mere applications for advice and assistance, separate records have been kept during the past year as shown in Table I, on page 117. It is to be noted, therefore, that, according to the single form of tabulation followed in last year's report, 4,308 complaints, over twice the number of last year, have been handled during 1915. Since this table was compiled, and at the time of going to press, this number has increased to 5,310. In all, since the complaint bureau was opened, 7,369 cases have been handled.

Record is being kept of the months in which complaints are filed (Table II, on page 117*a*), to indicate the variation and to discover, after a series of years, whether or not there is any significant variation by months.

In Table III, page 117*a*, showing complaint dispositions, it is to be noted that only about 25 per cent of the cases were of a nature which could be sent to other state or municipal officials for action or disposition. During the first year less than 25 per cent were so handled, and the percentage would be less this year if applications were not now tabulated separately. This fact denotes the actual necessity of the complaint bureau in finally securing or administering justice.

Table III, page 117*a*, also shows that action was taken to prosecute defendants on criminal charges in 48 cases. The total number of cases involving crime or fraud of a criminal nature, otherwise disposed of where the evidence was not sufficient for prosecution, was 232. In many of these, citations have been issued through district attorneys and refunds made by defendants. In five cases of the 48, convictions were secured directly by the Commission's attorney as special prosecutor; and likewise two indictments whereon the defendants have not yet been brought to trial. Of the 22 cases referred to district attorneys for prosecution after the evidence had been collected, 20 have been acted on. It is difficult to secure records from these scattered offices, but reports of nine convictions have been made and it is known that four other of these cases are pending. In the four cases classed as "Defendant arrested" in Table III, convictions were sought unsuccessfully by the Commission's attorney directly. Of the 11 cases referred to the police for action regarding violations of police regulations, five have been carried to successful prosecution.

Another interesting item in Table III is the one showing that money was collected in 120 cases. The amounts have not been recorded in accessible form, but this will be shown in future reports.

The 39 cases classed as "Filed for reference" in Table III, page 117*a*, are instances where action was not possible in the individual cases, for fraudulent practices of a general nature were disclosed and an effort will be made to devise laws or other general remedies.

In over 40 per cent of the 83 cases referred to the State Industrial Accident Commission the complainants did not know of the existence of the compensation law. In 17 of these cases the bureau's investigators succeeded in getting a higher award for injured immigrants who had not been able to properly present their cases either because they spoke no English or because of careless attorneys.

There is also a far-reaching effect on many more immigrants, and on careless officials, than the numbers would indicate in the little item "eight released from false arrest," in Table III. Arresting officers quickly hear of these cases and are more careful not to presume on helpless immigrants when they are endeavoring to help their records by making arrests.

With regard to Table V, page 117*c*, it may appear strange that so few complaints are filed by Oriental immigrants—Chinese and Japanese. Two reasons for this have been given by several prominent members of these races—that these immigrants are more wary and less apt to get in trouble, and if they do, they rely on their own efficient fraternal societies; and, secondly, they rather distrust any governmental offer of aid, because of the anti-Oriental legislation and race prejudice. These explanations will seemingly have to suffice, as the Commission made many efforts, through special notices and newspaper articles in the Chinese and Japanese languages, to let these races know the complaint bureau was open to them.

Another feature of Table V demanding special notice is the fact that, though over one-half of the defendants were native Americans, yet there were 283 Greeks and 216 Italians against whom complaints were made. The next ranking foreign race in this column was the Portuguese, with 83, while the others are mostly below 20. These figures indicate that the Greeks and Italians are most prone to prey upon their newly-arrived fellow-countrymen and other immigrants, although many of these complaints were trivial and resulted from the sectional and internal disputes common to the groups of these more emotional and excitable races. A special effort has been made by the complaint bureau to convince these defendants that they are acting in a fiduciary capacity in dealing with their newly-arrived countrymen, and that their conduct should be above suspicion.

Table VI, page 117*d*, is made so full and detailed this year that discussion of the various causes of complaints would add nothing. The long list of causes indicate clearly the importance of investigating the wide field of subjects covered and removing the causes which are found to be foundations for complaints. The large number of complaints concerning things which are obviously serious dangers to our political, social, and economic life—such as land frauds, business frauds, attorneys' frauds, etc.—furnishes food for careful thought. In such cases, particularly, do the constructive phases of the bureau's work affect and redound to the benefit of the native-born, and the entire community. But, in place of dealing in generalities in this connection, a large number of typical cases are given on pages 107 to 117.

Tables VII, VIII, and IX, pages 117*f*, 117*g*, and 117*h*, contain the data concerning the applications as distinguished from the complaints (for explanation of distinction see page 117). Table VII shows the diversity in the nature of the applications. The desired information or assistance was furnished in practically every instance except where aid was sought in obtaining employment. The Commission is, of course, not equipped to act as an employment agency, and the 428 applications in this connection demonstrate the need or demand for the free state employment bureau created by the 1915 legislature. Likewise the 174 instances where legal advice was sought show the need of legal aid societies especially equipped to render service in this field. Table VIII, page 117*g*, shows that assistance was rendered to 139 native-born Americans as well as to the 42 other races enumerated. Here, as in the case of complaints, the bureau rendered what aid it could to the native-born, although it has no technical jurisdiction in such cases.

Table IX, page 117*h*, is not so complete as it should be, due to clerical oversights in taking down information as to the length of residence. However, this information in the 431 cases recorded clearly demonstrates the fact that the newly-arrived immigrants are most in need of assistance and protection, and that after a few years they become adjusted to their new surroundings and more self-reliant.

(E) TYPICAL CASES.

MISCONDUCT OF OFFICIAL.

A German, whose respect for officers of the law was instilled in his native land, called at the Commission office, asking if the laws of the United States authorized a constable to charge a man he had arrested two dollars and a half "for board and the trouble of putting him in jail." After being closely questioned the German made a sworn statement in which he stated he had been waiting in a small town for two pay checks due him, and when only one came he refused to accept it without the second check. His boarding-house keeper, to whom a small bill was due, sent for the constable, who told the German to either take the single check and pay his board bill, or go to jail. The German refused to take the check; so, without a warrant, or without even being taken before a magistrate, he was placed in jail on a Saturday morning and was confined all day. In the evening the constable told him that if he would pay the boarding-house keeper and "expenses of $2.50" he could be discharged—otherwise he would have to remain in jail over Sunday and the expenses would be much more. The German, ignorant of American law, paid the bill.

When confronted by the affidavit, the constable explained that as the justice was out of town, no warrant was issued; that some one had to pay the expenses—which consisted of fifty cents for two meals served in jail—and two dollars for "his trouble." He claimed the German offered voluntarily to pay these expenses as he had caused them.

This information was laid before the Commission's attorney, who secured a return of the two dollars and fifty cents and also placed the entire matter before the district attorney of the county and a prosecution is now threatened.

INDUSTRIAL ACCIDENT RECOVERY.

A Frenchman recently complained to the Commission that he had been severely injured through the falling of the cookhouse steps at the place of his employment. He had received some medical treatment and compensation but was still unable to follow his occupation, although he had been discharged as well.

Investigation showed that he had been reported by the employer's doctor as being able to resume work, but after trying to do so, he was unable to continue. The employer's insurance carrier refused to make further compensation and the Commission filed an application for a hearing before the Industrial Accident Commission. As a result of this hearing the Frenchman was awarded a substantial increase in compensation by the Industrial Accident Commission.

The Immigration Commission has assisted a large number of aliens to file with the Accident Commission claims for injuries received, or requests for additional compensation, and with few exceptions the claims have been allowed.

INSURANCE FRAUD.

A young Spanish boy, a political refugee from Northern Mexico, through the efforts of the Commission, secured work at the shops of the Southern Pacific Company. One day just at the close of the lunch hour an officious looking man came to the shop yard, handed him a paper and told him to sign it. The boy understood little English and thinking the man was one of the railroad timekeepers, readily signed. At the end of the month he found his pay check $6.60 short. Inquiry at the railroad office showed a signed statement had been given by the boy authorizing the railroad company to deduct this amount for accident insurance. Up to this time a policy had not even been received by the boy. An investigation by the Commission showed that the agent had manufactured the entire statement used in making out the insurance application, for the policy had been sent to an imaginary address and returned to the company; the occupation as stated in policy was incorrect, as was the age of the insured.

Upon presentation of these facts the insurance company readily refunded the initial payment and cancelled the policy.

The importance to the State of fair and just treatment of people ignorant of our language is illustrated by this same Spanish boy. Recently he called at the Commission's office asking for names of firms handling large complete flour-mill machinery. He stated a friend in Mexico desired to erect a mill and would buy the machinery in this country. He has also asked for information regarding the shipment of coffee to this State and the buying of farm machinery here for relatives in Mexico.

SUBCONTRACT WAGE FRAUDS.

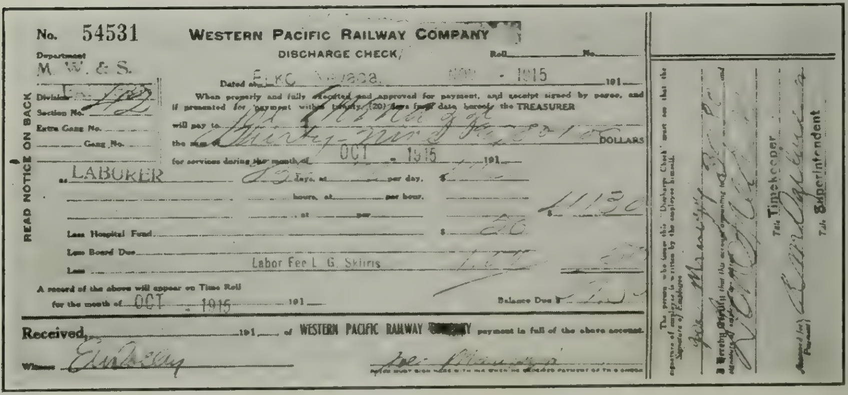
A large sugar company leased land to a Chinese contractor and agreed to pay him by the ton for all sugar beets grown. To secure the payment of the rent and of advances made, the Chinese gave a crop mortgage to the company on the beets. The Chinaman then let a subcontract to a Japanese, who secured a large number of foreign laborers to do the work. Most of these men were given subcontracts to care for a small patch of beets. After working a few weeks the Japanese found his contract was unprofitable. He persuaded the Chinaman to advance him some money and, taking this, he left for parts unknown. The laborers were therefore unable to collect the money due them and on account of the crop mortgage were unable to attach the beets.

This is only one instance of a large number of cases in which irresponsible Japanese farm contractors have defrauded foreign laborers out of their hard earned money. There are on file in the Sacramento office of the Commission, for the year 1915, over one hundred claims for wages on money due on subcontracts from Japanese to farm laborers. It is hoped that the new non-payment of wages law will aid in remedying this nefarious practice.

DOUBLE EMPLOYMENT FEE.

A Greek called at the Commission's office with a receipt showing he had paid a Greek employment agent a fee of $1.50 for a job as section hand on a railroad. He also had with him his pay check issued in Nevada, where he had been sent to work, which check showed that a "labor fee" of $1.00 had been deducted for the month. As a result of an investigation it was learned that a Greek labor contractor has the exclusive privilege of furnishing section employees to several large railroad systems and, in addition to charging them a fee for getting them work, he collects one dollar a month from each man employed. This same Greek maintains stores where the section hands are expected to spend their money. As the Greeks say: "He gets us both coming and going."

While the laws of California do not allow a monthly deduction to be made from wages to pay an employment agent, by hiring the men in this State for employment in other states the same end is accomplished.



No. 54531 **WESTERN PACIFIC RAILWAY COMPANY**

DISCHARGE CHECK Roll ____ No. ____

Department M. W. & S.

Division ____
Section No. ____
Extra Gang No. ____
Gang No. ____

Dated at Elko Nevada, 1915 191__

When properly and fully executed and approved for payment, and receipt signed by payee, and if presented for payment within twenty (20) days from date hereof, the TREASURER will pay to ____ the sum of ____ DOLLARS for services during the month of OCT 1915 191__

as LABORER ____ days, at ____ per day. $ ____
____ hours, at ____ per hour. ____
____ at ____ per ____ $ ____
Less Hospital Fund $ ____
Less Board Due ____
Less Labor Fee L. G. Skliris ____

A record of the above will appear on Time Roll for the month of OCT 1915 191__ Balance Due $ ____

Received, ____ 191__, of WESTERN PACIFIC RAILWAY COMPANY payment in full of the above account.

Witness ____

READ NOTICE ON BACK

The person who brings this "Discharge Check" must see that the signature of employee is written by the employee himself.
Signature of Employee

I hereby certify that this amount ____

Title Timekeeper

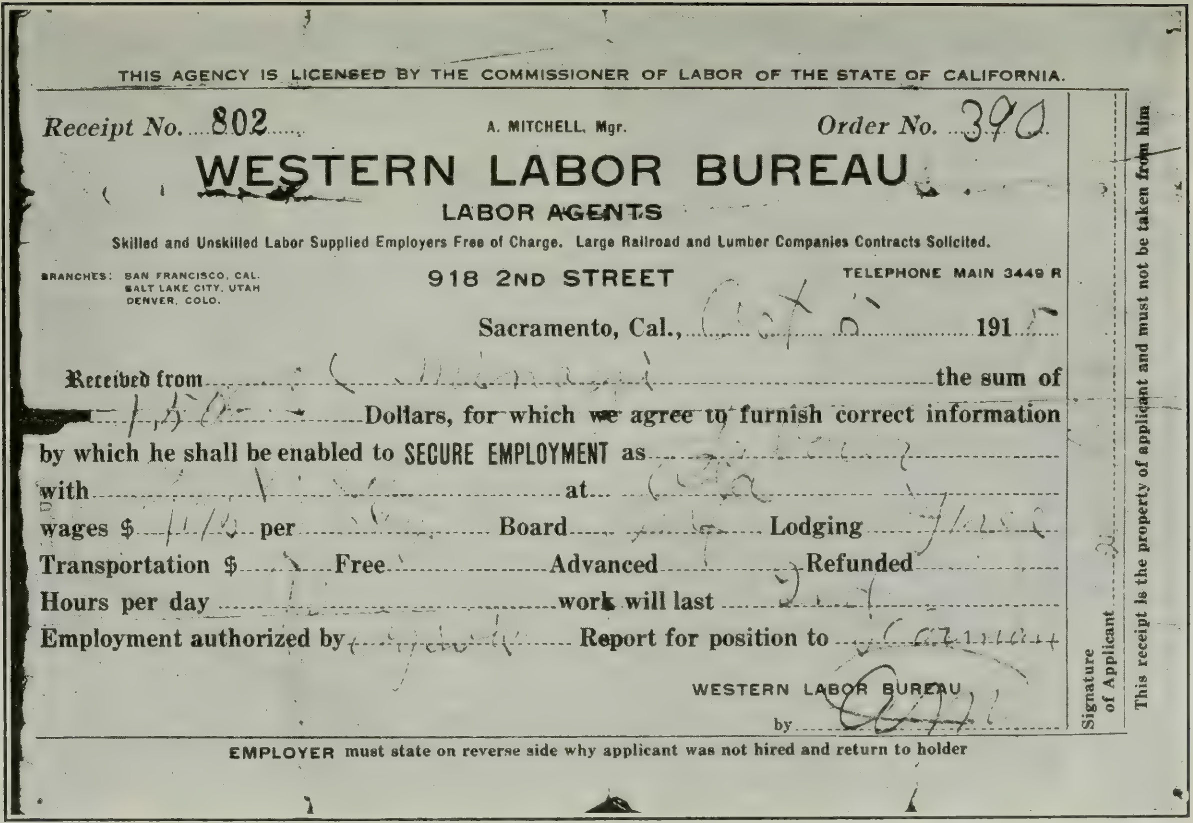
Approved for Payment

Title Superintendent

Reproduction of a pay check issued an immigrant. Note deduction of $1.00 for "Labor Fee L. G. Skliris." This immigrant had already paid $1.50 to an employment agent in California for this job, and he had no dealings whatsoever with L. G. Skliris. It seems that the sum of $1.00 is deducted each month for this so-called "fee." The Commission has taken the matter up with the railroad company and is attempting to have this double and excessive employment fee system abolished.

LAND FRAUD.

An Italian woman brought to the Commission's office a notice of delinquency for taxes on a lot assessed to her in Texas. She explained that an Italian agent had sold her husband this lot for $25.00 when he was employed in a coal mine in the East. The agent stated a fine town was growing up; great quantities of oil and coal were there and that this lot was worth several hundred dollars but was being sold cheap merely as an introductory offer. She stated that hundreds of laborers had purchased lots as a result of the agent's representations. The woman from Italy desired to know if she should pay the taxes. During the Commission's investigation, word from a reliable public officer in Texas was received to the effect that this town "is an 'imaginary city' and is in litigation also."



THIS AGENCY IS LICENSED BY THE COMMISSIONER OF LABOR OF THE STATE OF CALIFORNIA.

Receipt No. 802 A. MITCHELL, Mgr. *Order No.* 390

WESTERN LABOR BUREAU

LABOR AGENTS

Skilled and Unskilled Labor Supplied Employers Free of Charge. Large Railroad and Lumber Companies Contracts Solicited.

BRANCHES: SAN FRANCISCO, CAL.
SALT LAKE CITY, UTAH
DENVER, COLO.

918 2ND STREET

TELEPHONE MAIN 3449 R

Sacramento, Cal., ... 191...

Received from .... the sum of
1.50 .... Dollars, for which we agree to furnish correct information
by which he shall be enabled to SECURE EMPLOYMENT as ....
with .... at ....
wages $ .... per .... Board .... Lodging ....
Transportation $ .... Free .... Advanced .... Refunded ....
Hours per day .... work will last ....
Employment authorized by .... Report for position to ....

WESTERN LABOR BUREAU
by ....

Signature
of Applicant

This receipt is the property of applicant and must not be taken from him

EMPLOYER must state on reverse side why applicant was not hired and return to holder

Reproduction of a combined receipt for $1.50 and an employment order issued to an immigrant by a private employment agency. The immigrant secured the job, but, on his first pay check from the railroad, an additional $1.00 was deducted as another employment fee to a man whom he had never seen or dealt with (See railroad pay check on page 110, and digest of case on page 109.

It was learned that the company promoting the townsite had employed agents speaking different foreign tongues, and by misrepresentation had sold land all over the country to ignorant aliens.

An effort to get more definite information is being made, and purchasers from the company will be aided in every possible way, through co-operation with Texas officials.

AIDING IMMIGRANT WOMEN.

During the summer season a large number of foreign women, most of whom have large families, find employment in fruit canneries. For many years one of the large canneries in Sacramento has provided a nursery for the babies and little children of its women employees, but due to difficulties over sanitation and proper attendants for the little ones, the cannery decided to abandon its nursery during the summer of 1915. A large number of foreign mothers appealed to the Commission to assist them in securing a nursery. Several charitable organizations were consulted and finally the Catholic Ladies Relief Society agreed to take charge of the nursery provided financial assistance could be furnished. An agreement was entered into whereby the cannery, the women employees and the relief society were to share in the expense. A suitable building was secured; this was cleanly and neatly furnished and a playground was provided for the little ones.

In addition to an Italian woman attendant the relief society secured the services of a practical American nurse and throughout the summer months from twenty to fifty children were cared for each day. Simple sanitary lessons were given to the mothers and for the first time in the history of this cannery no trouble over sanitation was experienced. Instead of running the streets, the little ones were kept busy in the playground.

Much suffering was avoided by having the nursery near enough so that the mothers could nurse and care for their babies at frequent intervals.

So successful was the nursery that plans are now under way for having similar arrangements made at other canneries during the summer of 1916.

LOAN SHARK FRAUD.

During the spring of 1915 a number of Hindus called at the office of the Commission, stating they had lent sums of money to a second-hand store proprietor on his promise to repay in a short time and that they had been unable to collect. Several of these men did not even have receipts, though the individual loans varied from forty to two hundred and sixty dollars each. An investigation of the business methods of the second-hand store man disclosed the fact that he made the practice of borrowing money from Hindu laborers, whose language he could speak, and in most cases gave no receipt and paid no interest. If the lender strenuously insisted on payment, a small amount of cash was given him and he was persuaded to take the balance out in second-hand goods.

It was also shown that the second-hand store man had been acting as an employment agent, without a state license, and as such had sent out gangs of Hindus to various parts of the State, charging them from one to three dollars each for the job.

With the co-operation of the assistant deputy labor commissioner a warrant was sworn out and the second-hand storekeeper was convicted of running an employment agency without a license.

Due to the fact that the defendant's property was heavily encumbered it was useless to advise the Hindus to sue for their loans, but a representative of the Commission secured installment notes in every case and these are being paid regularly.

Due to the wide publicity given to the case in both American and foreign papers it is certain that this same second-hand store man will not be able to borrow money without security in the future, nor will the Hindu laborers be easily persuaded to lend money to irresponsible parties, or to anyone unless security is furnished.

WIFE DESERTION.

A young, pretty Italian girl married an Americanized Italian milker employed on a large ranch and for a year and a half lived happily with him, aiding in his work and saving enough to pay a considerable amount on household furniture. Later, however, the wife became ill and after remaining on the ranch for over a month, was brought to a city hospital, where she remained for several weeks. Her husband seldom called to see her and finally she learned through a storekeeper that he had left the ranch, sold many of their belongings and had gone off with another woman. The wife, who had become destitute, was taken in by a sister, but as the latter had a large family and a very small income, she was unable to support her permanently.

The Commission was appealed to, a warrant sworn out for the husband's arrest and other assistance was rendered to the wife.

The husband, hearing of the steps taken against him, wrote from Los Angeles to his wife asking her to go to him there as he had a job and would support her. Since the wife wished to go the prosecution was dropped.

INSURANCE AGENT'S TRICKERY.

A number of Austrians employed in a large railroad shop complained to the Commission that they were unable, when injured, to collect accident insurance, although their policy premiums had been paid and they were in good standing. A thorough investigation showed that the agent of this company went to the dwellings of the Austrians, played cards, drank wine with them and after winning their confidence, got them to take out sick and accident insurance in his company. The corporation the men worked for paid wages on the fourteenth of the month and the agent usually called either on the fourteenth or fifteenth to collect the monthly premium. The policy, which was highly technical and complicated and which the Austrians could not read, provided that premiums must be paid on the first of each month and if not so paid the policy immediately lapsed. However, it might be renewed, as to subsequent accidents, immediately upon the payment of the premium after the first of the month but would not revive as to sick benefits until ten days after the payment was made. Therefore, a man paying his premium on the fourteenth of each month was insured only from that date until the first of the following month, against accident, and only from the twenty-fourth until the first of the next month, against sickness. All the Austrians swear the agent told them to "pay any time in the month—it's all the same." The agent of the company later entered the jitney business and injured men seeking notification reports and blanks were unable to find him for days at a time. This resulted in delay and confusion in the filing of claims and caused several claims to be disallowed.

These conditions were reported to the general office of the company and as a result new agents have been appointed. In cases where the objection to payment of claims was on purely technical grounds, settlements have been secured and the publicity given through the press will make a repetition of this fraud among the Austrians extremely difficult.

DESTITUTION AND EMPLOYMENT TROUBLE.

During the cold, rainy month of January, a Mexican called at the Commission's office, stating that, on a big Japanese ranch, a large number of Mexican and Italian laborers, many of whom had families, were without food other than damp beans picked up in a field and such celery stalks and other scraps as could be foraged.

An investigator was immediately sent out and found the conditions pitiable indeed. These laborers had worked several weeks husking corn and were unable to get their pay. The groceryman had stopped credit, and the Japanese had forbid them to use wood on the ranch; they were living in old tents with little to eat and no fire except such as could be made with green river brush. One of the Mexican women was about to become a mother. None of the laborers had money enough to go to Sacramento, nor means to live if they had been able to get there. The employer was found and "advised" to send groceries to the camp at once. This he did and in addition paid the passage of the women and children to Sacramento, where temporary shelter was provided.

It was found that the employer had contracted with a Mexican "padrone" to have the corn husked. The employer was to receive the husks for tamales and the Japanese farm company to get the corn. The employer had also made contracts with a wholesale house to buy most of his husks. However, the wholesale house refused to accept the husks on the ground that they were not first-class and the employer was therefore unable to realize money to pay the laborers. The husks were sold later at a small fraction of their real value and at such a low price that some fifty laborers realized for several weeks work scarcely more than their board. Legal advice was given them and suits are still pending against both the Japanese farm company—for causing damage to husks—and against the wholesale house for breach of contract.

Since then a number of these laborers seek information of the Commission before they accept any subcontract work and ask advice on matters of every nature from care of infants to laboring conditions in distant parts of the State.

FICTITIOUS COMPANY FRAUD.

A young Swiss immigrant, who by industry and frugality had accumulated a few hundred dollars as a farm worker, decided to come to the city to seek employment. In the "employment wanted" column of a San Francisco newspaper he inserted an advertisement to the effect that a young man of industrious habits had a few hundred dollars to invest with his services. He promptly received a reply on an imposingly printed letterhead from the New York and San Francisco Consolidated ——— Co., advising him that he could receive some valuable information as to such an investment by calling at the San Francisco branch of the above named company in a well known office building on Market street. The young man hastened to comply with the information and was offered steady employment at good wages, but would be required to deposit one hundred and fifty dollars as a guaranty of the faithful performance of his duties and was given a signed agreement acknowledging receipt of the money, which, it was specified, would be returned to him upon two weeks notice in writing that he desired to terminate his employment with the company. After a few days the young man became suspicious that the large concern with which he had secured employment might not be what its imposing name suggested. He applied at the Immigration Commission office for information and was promptly assured that the company existed only in name on the gaudy letterhead of the sharper who had taken his money.

The scheme of this operator was to secure from each applicant for employment a substantial deposit on the investment-with-services plan, give them employment for a week or two while he was gathering in a string of "easy ones," and then to disappear. While employed the men were engaged in distributing handbills advertising a fake sale.

Upon information supplied by investigators for the Commission this operator was arrested and jailed upon a charge of larceny "by trick and device."

FRAUDULENT SCHOOL.

An intense desire to secure employment is one of the most pronounced characteristics of the immigrant. Oftentimes this desire amounts to a weakness which causes him to become susceptible of exploitation with the utmost ease. One of the most common methods of preying upon the immigrant through this weakness is by the operation of an alleged school offering employment to students who have completed a course of study. In this class of fraudulent schools a considerable number of so-called "auto colleges" are included.

In one instance a complaint made to this Commission by an immigrant has led to the discovery of a combination between one of these so-called "auto colleges" and an employment agency, wherein a lucrative business was done by both school and agency, the tuition fee of $25.00 being divided between them. The course of study amounted to nothing. The allurement of a promise of a steady job at $75.00 per month kept the school well supplied with students. After the course of study (learning to drive an automobile) had been completed and the demands of the students for the promised jobs became insistent, they were driven away. One of these schools in its efforts to rid itself of insistent graduate students demanding the promised jobs took seven students to Stockton under promise of employment, placed them in a hotel and left them without work and without money to pay hotel bills. This school made a practice of borrowing money from students and when the matter was taken up by Commission officials, restitution of tuition fees and borrowed money amounting to more than $200.00 was forced to be made to the seven students taken to Stockton and in addition, a hotel bill of more than $100.00 was finally paid by this school.

BANKING AID.

Immigrants, in addition to the disadvantage incident to their inability to speak the language, find themselves so far removed from friends and acquaintances that the mere matter of establishing identification becomes a problem of staggering magnitude. In order to be able to avail themselves of pecuniary benefits that may inure to them from friends in other parts of the world, the aid of some friendly disposed agency becomes absolutely essential. This need becomes great somewhat in proportion to the distance which separates them from friends or from the basis of an emergency supply.

The recent case of a young man from Poland very well illustrates some of the difficulties here mentioned.

He arrived in San Francisco with but a small sum of money, having changed his destination, en voyage, from Buenos Aires, Argentina, where he had relatives, to San Francisco. His money was soon gone, and being unable to secure employment he was in much distress when he applied at the Commission's office.

The relatives in Argentina were communicated with and the information obtained that 500 pesos, available for the young man's benefit, had been sent to his order at Shanghai, which port was on his originally intended route. This money was collected and placed in the hands of the immigrant in a few days, although he had been trying to collect it, through his own unaided efforts, for six months.

TABLE I.

Complaints Received from January 1, 1915, to January 1, 1916.

In San Francisco	906
In Sacramento	1,711
In Los Angeles	287
In other offices	2
Total	2,906

*Applications Received from March 1, 1915, to January 1, 1916.

In San Francisco	435
In Sacramento	967
Total	1,402
Total	4,308
Total complaints and applications Jan. 20, 1914, to Jan. 1, 1915	2,059
Grand total	6,367

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*Under the head of "Applications" are listed requests and complaints of minor importance not against specified individuals. In the first annual report this distinction was not made. Consequently, under the former classification, or single tabulation, the total number of complaints for the past year would be 4,308—as compared to the total of 2,059 for 1914-1915.

TABLE II.

Complaints by Months—1915.

January	491
February	317
March	320
April	266
May	227
June	237
July	168
August	218
September	177
October	139
November	156
December	190
	2,906

TABLE III.

Transcript of Complaint Register, January 1, 1915, to January 1, 1916, Showing Disposition of Complaints.

Adjusted	174
Assistance given	194
Attorney, referred to	41
California Development Board, referred to	1
Camp Inspection Department	149
Charities, referred to	33
City Health Officer, referred to	10
Commissioner, City, referred to	3
Consul, referred to	2
Convictions	5
County Engineer, referred to	3
Dairy Bureau, State, referred to	3
Defendant arrested	4
Dismissed	76
District Attorney, referred to	22
Dropped by complainant	85
Employment agencies, referred to	30
Filed for reference	39
Grand Jury, referred to	4
Highway Commission, referred to	10
Hospitals, referred to	9
Humane Society, referred to	1
Immigration aid societies, referred to	10
Immigration officials (United States), referred to	14
Indictment secured	2
Industrial Accident Commission, referred to	83
Industrial Relations Commission (United States), referred to	3
Information given	216
Insurance Commission, referred to	4

TABLE III—Continued.

Transcript of Complaint Register, January 1, 1915, to January 1, 1916, Showing Disposition of Complaints.

Labor Commission, referred to	587
Legal advice given	388
Lunacy Board, State, referred to	1
Medical Examiners, Board of, referred to	9
Money collected	120
Municipal employment bureaus, referred to	36
Nurseries secured	59
Pending	373
Police, referred to	11
Post Office Inspector, referred to	2
Probation Officer, referred to	3
Public Defender, referred to	3
Publicity	19
Public Morals Committee, referred to	6
Railroad Commission, referred to	1
Released from false arrest	8
Shipping Commissioner, United States, referred to	2
Travelers' Aid Society, referred to	1
Unable to locate defendant	11
Woodyard, Associated Charities, referred to	36
Total	2,906

NOTE.—Disposition of applications is not given in detail, as the advice or information was furnished in every instance, and varied in every case.

TABLE IV.

Up to January 1, 1916, there were still pending or unsettled from various causes, 373 complaints, as follows:

Attorneys' frauds	5
Business frauds	33
Debt	34
Industrial injury	28
Wage claims	39
Miscellaneous	191
Total	373

TABLE V.

Nationality of Complainants and Defendants.

	Complainants.	*Defendants.
African	1	----
American, South	14	2
American, U. S. A.	183	1,538
Armenian	10	----
Australian	4	----
Austrian	79	12
Belgian	4	2
Bohemian	13	----
Bulgarian	10	----
Canadian	9	1
Chinese	4	18
Croatian	46	5
Cuban	1	----
Danish	14	----
English	27	2
Filipino	1	----
Finnish	3	----
French	38	9
German	77	46
Greek	572	283
Hindu	80	5
Hollander	13	1
Hungarian	27	5
Irish	27	10
Italian	729	216
Japanese	4	68
Mexican	231	55
Montenegrin	4	----
Norwegian	5	----
Persian	2	----
Polish	31	41
Porto Rican	6	----
Portuguese	130	83
Roumanian	4	1
Russian	109	31
Samoan	1	----
Scotch	3	----
Serbian	10	5
Slavonian	57	10
Spanish	241	44
Swedish	23	4
Swiss	18	3
Syrian	1	----
Turkish	32	----
Welsh	1	----
Yiddish	7	36
Nationality not known	----	370
Totals	2,906	2,906

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*The person or corporation against whom a complaint is lodged is designated as the "defendant" in the records for the sake of brevity and clearness, though not such in the legal or technical sense.

TABLE VI.

Transcript of Complaint Register, from January 1, 1915, to January 1, 1916, Showing Causes of Complaints.

Abuse and threats	16
Accidents (industrial)	198
Alien labor on public works	1
Assistance wanted	44
Attachment threatened	3
Attorneys' fraud	47
Automobile accidents	5
Automobile drivers' overcharges	1
Baggage damaged	1
Baggage lost	11
Baggage overcharge	2
Battery	14
Blacklisting	1
Boarding house frauds	7
Breach of promise	4
Breach of the peace	3
Business frauds	57
Charity frauds	5
Child labor law, violations of	3
Checks fraudulent	9
Coffee houses, undesirable	2
Conspiracy	3
Contracts, breach of	119
Debts	150
Defamation of character	1
Deportations desired	9
Deportations feared	5
Depriving of livelihood	7
Desertions	9
Destitution	59
Destruction of property	1
Detective agency	1
Detention of children	2
Detention of money	7
Detention of property	10
Discrimination	37
Drainage trouble	1
Eight-hour law on public works	2
Ejections and evictions	34
Embezzlement	3
Employment agency frauds	267
Employment dangerous	6
Employment desired	130
Employment misrepresented	6
Escaped criminal	1
Extortion	30
Failure to provide	6
Failure to send children to school	1
False arrests	11
Fines unjust	2
Food impure	4
Fraud, general	140

TABLE VI—Continued.

Transcript of Complaint Register, from January 1, 1915, to January 1, 1916, Showing Causes of Complaints.

Grafting foremen	13
Hospital complaints	4
Hospital treatment desired	1
Immigration irregularities	16
Immorality	7
Illegal banking business	1
Information wanted	97
Insanitary dairy	6
Insanitary labor camps	160
Insanitary living conditions	20
Insanitary restaurant	1
Insanity	1
Insurance frauds	44
Interference with children	1
Interference with mail	1
Interference with water rights	1
Interpreter desired	2
Interpreters' frauds	5
Killing of horse	1
Land frauds	94
Landlords' frauds	7
Legal advice wanted	22
Libel	1
Loan frauds	3
Loss of property by negligence	1
Lost pay check	2
Lottery fraud	1
Malicious prosecution	4
Marital complaints	12
Medical illegalities	22
Misuse of mail	1
Murder	1
Naturalization	8
Neglect of children	12
Neglect to provide nursery	81
Nuisances	5
Officials, neglect of duty	50
Papers withheld	1
Partnership difficulties	9
Pawnshop frauds	1
Peonage	1
Perjury	1
Poisoning	1
Police misfeasances	6
Probation desired	3
Property lost	4
Prostitution	10
Railroad overcharges	4
Robbing	5
Saloon complaints	1
Sickness	3
Taxes excessive	1
Thefts	27

TABLE VI—Continued.

Transcript of Complaint Register, from January 1, 1915, to January 1, 1916, Showing Causes of Complaints.

Ticket frauds	1
Time check frauds	2
Transfer company frauds	2
Transportation troubles	4
Undesirable aliens	5
Wage claims	562
White slavery	4
Witness fees, nonpayment	6
Witness, interference with	5
Total	2,906

TABLE VII.

Transcript of Application Register, March 1, 1915, to January 1, 1916, Showing Nature of Applications.

Army, information about	2
Attorneys, information about	6
Camp sanitation, information about	21
Consul, information about	20
Destitution	109
Deportation, information about	25
Employment agencies, information about	6
Employment wanted	428
Farm colonies, information about	15
Help wanted	11
Homestead lands, information about	16
Hospital service wanted	16
Identification	3
Immigration laws, information about	34
Information (general)	213
Interpreter wanted	16
Labor Commissioner, information about	34
Lands, information about	21
Legal advice	174
Letter writing	25
Naturalization, information about	25
Orphanage, to place children in	1
Persons, information about	105
Relatives, location of	9
Schools, information about	8
Translation wanted	16
Unemployment, information about	6
Workmen's compensation, information about	37
Total	1,402

TABLE VIII.

Transcript of Application Register, March 1, 1915, to January 1, 1916. Nationality of Applicants.

Albanian	1
American (U. S. A.)	139
American (South)	1
Armenian	4
Australian	18
Austrian	31
Belgian	4
Bohemian	9
Bulgarian	3
Canadian	7
Chinese	6
Croatian	14
Danish	4
Dutch and Flemish	6
English	43
French	15
German	67
Greek	120
Hebrew	35
Hindu	28
Hungarian	10
Irish	12
Italian	380
Japanese	3
Lithuanian	8
Mexican	30
Norwegian	1
Persian	2
Philippino	2
Polish	16
Porto Rican	10
Portuguese	38
Roumanian	2
Russian	54
Samoan	2
Scotch	6
Serbian	8
Slovanian	19
Spanish	119
Swedish	12
Swiss	10
Syrian	2
Turkish	6
Nationality not given	95
Total	1,402

TABLE IX.

Transcript of Application Register, March 1, 1915, to January 1, 1916, Showing Number of Years Applicants Have Resided in the United States.

New arrivals	87
1 year in country	44
2 years in country	23
3 years in country	32
4 years in country	31
5 years in country	41
6 years in country	30
7 years in country	27
8 years in country	23
9 years in country	17
10 years in country	15
11 years in country	2
12 years in country	5
13 years in country	6
14 years in country	7
15 years in country	3
18 years in country	1
19 years in country	2
20 years in country	3
22 years in country	1
25 years in country	3
27 years in country	1
28 years in country	1
30 years and over in country	26
No data	971
	1,402

III.

IMMIGRANT EDUCATION.

Since the publication of last year's report, the apathetic attitude of the nation toward the education of adult immigrants has undergone an almost miraculous change. People are coming to realize that the immigration problem in the United States is not limited to the question of restricting immigration in the future, but that there is also the problem of thoroughly assimilating the millions of foreign-born already here; and it seems to be generally conceded that the first step in this process of assimilation is education in the English language and in citizenship.

Certain phases of the international complications in connection with the European war have been the dramatic, but effective, causes for this sudden and popular awakening. Whether or not there have been any real foundations for the fears and discussions in this connection is of no concern to this Commission, but the fact remains that the public has, in this way, been aroused to the consideration of very real and broad problems of assimilation and education—not limited to the provincial subject of patriotism. This result has been achieved much more quickly than it could have been through the ordinary channels of argument and propaganda. However, this new enthusiasm over the education of immigrants must outlast the war if real constructive work is to be done, and if lasting results are to be achieved.

The Commission, therefore, is attempting to enlarge upon this popular, patriotic conception of the problem of immigrant education. By the collection and publication of such data as are contained in the two leaflets reproduced at pages 123 and 127, it is aimed to show that each community suffers politically, socially, and financially, in times of war and peace, by neglecting its immigrant population, instead of making valuable citizens and assets of these people. As was announced in last year's report, the need of education for adult immigrants was not taken for granted, nor was any hasty or hysterical program thrust forward. The field was carefully studied for more than a year, and a program worked out in detail before any action was taken. The survey of the Macy Street School district in Los Angeles, and of the work done by that school (reported on pages 227 to 262), demonstrated both the need and the advantages of making provisions in the curriculum of public schools for adult immigrants. Similar, but less complete, investigations were made in San Francisco, Alameda, and Contra Costa counties. No reports of these latter investigations are published, as they were made largely for the purpose of informing and educating the Commission itself. In the cities of these northern counties, educational opportunities offered adult immigrants were found to be inadequate, and in the rural districts there was a woeful lack in this regard—in fact in some instances it was found that the second immigrant generation spoke no English, because they lived in isolated groups and never attended school.

On the other hand, the investigations made to obtain the data summarized in the charts and statistics in the leaflets on pages 123 to 127, were very thorough and complete. The Commission has on file a full record of all the figures and information gathered, as well as the exact manner in which every detail was checked. An examination of this record will show that the totals given and the conclusions reached are not only extremely conservative, but as accurate as such estimates can be. Los Angeles was the first city so surveyed because it has a national reputation for its work in immigrant education, and it was felt that if it could be shown that this city was not fully meeting the demand there would be a *prima facie* case against the other California cities which are more backward in this field.

With all this information concerning local conditions at hand, and after studying the experience of the older Eastern cities, the Commission early in 1915, felt justified in publicly presenting a program for immigrant education. This program is outlined in the following pages under the separate headings of English, citizenship, labor camp, and home education.

(A) ENGLISH EDUCATION.

Obviously the immigrant, whether he be educated or uneducated in his own language, must learn the English language as soon as possible if he is to be readily assimilated. Without some knowledge of English he is handicapped from the start—in getting employment, in avoiding professional exploiters, in adjusting himself to new social and economic conditions, and in becoming a citizen. Since it is a matter of public investment for the protection of the community, as well as for the benefit of the immigrants, English should be taught these people in the public schools at the public expense. Therefore, the Commission is committed to a campaign for the establishment of free evening classes in the public schools wherever there is an appreciable number of immigrants.

As a beginning, and as the quickest and most effective way of arousing interest and bringing this matter to the attention of the people, the aid of the California Federation of Women's Clubs has been enlisted in this campaign. The federation has pledged itself to this work as a part of a general effort to eradicate illiteracy in the State. Thus, it has been recognized that the establishment of night schools for the teaching of English benefits not only the non-English speaking foreign-born, but also the illiterate native-born. In a recent announcement by the federation's chairman of education the following striking slogan is printed:

Immigrant mothers' class in English in neighborhood school. These women do not have the opportunity to learn our language by coming in contact with English speaking people, so they meet in the neighborhood school several afternoons each week to study English.

"WHAT IS THE MATTER WITH CALIFORNIA?

"California stands down No. 17 in the literacy column.

"California has nearly 75,000 illiterates, two-thirds of whom are foreign-born.

"California has a great number of literates who can not speak our language.

"California can not afford to go to sleep on her job."

The announcement refers to the particular problem of educating immigrants as follows:

> "That the foreign-born with their children comprise over one-third of the population of the United States is a startling fact.
>
> "They have much to give to us from the racial past and we have much to give them. But before we can give or accept there must be a mutual interpretation, there must be a common language. Logically then, the first step in the Americanization of the foreigner is to teach him English.
>
> "This is necessary that he may protect himself and that he may not endanger others. In many states there are laws prohibiting the employment in any hazardous undertaking of men who can not speak and read English.
>
> "In short it is necessary, that he may improve his economic status and avail himself of political privileges.
>
> "California has blazed the trail for many remedial and educational successes and has become known as progressive. Now if she shall provide the first state plan for the teaching of English to the adult immigrant, we shall be justified in feeling a sense of pride.
>
> "Now is our great opportunity to demonstrate that co-operation is worth while—that forty thousand women concentrating upon a definite work, stupendous though it may be, will make it a success. And we shall have helped in the effort to weld the people in this country into an American race—a race that will stand together, for America, in peace or in war—one in ideals, rights, and privileges."

The Commission plans to prepare literature for the clubs to use for self-education and for general propaganda. The clubs of the federation, in turn, will assist the Commission in making surveys of the immigrant population and the facilities or provisions for their education in the different communities. When the facts are thus determined, the clubs will then assist the Commission to secure the co-operation of all possible organizations of men and women in each community in making a general demand or campaign for the establishment of evening schools, where they are needed, or the proper support of such schools where an adequate number are already established.

This movement has already been given wide publicity by the distribution of literature among club women, by talks before almost every club belonging to the federation, and before the state and district conventions. Moreover some actual results have been achieved by local clubs in actually bringing about the establishment of evening classes—notably in the town of Roseville, where hundreds of immigrants and native-born Americans, employed in the large railroad shops, immediately enrolled. The first organized effort in carrying out the program outlined above has been in connection with the Los Angeles immigrant education survey already referred to. The following twelve pages are reprints of three leaflets which graphically summarize the situation found in Los Angeles, and which set out general plans for attacking the problems of illiteracy and the education of the adult immigrant. The local federated clubs organized an ''America first'' league which will use the leaflets in conducting an active campaign to secure larger attendance and the much needed additional financial support for the evening schools. This league is large, and its membership represents all religions, many nationalities, and most of the women's organization of the city, including the Parent-Teachers' Association, the various settlements, the Young Women's Christian Association, and the Daughters of the American Revolution.

IMMIGRANT EDUCATION LEAFLET NO. 1.

PUBLISHED BY

COMMISSION OF IMMIGRATION AND HOUSING OF CALIFORNIA.

525 Market Street, San Francisco.

In this leaflet is submitted the result of an investigation made in Los Angeles. As Los Angeles pays more attention to the education of the immigrant than other California cities, the general conclusions of this survey apply generally to all the communities of the State.

The graphic chart shows that ignorance of our language and our laws makes in logical sequence for unemployment, poverty, sickness and crime.

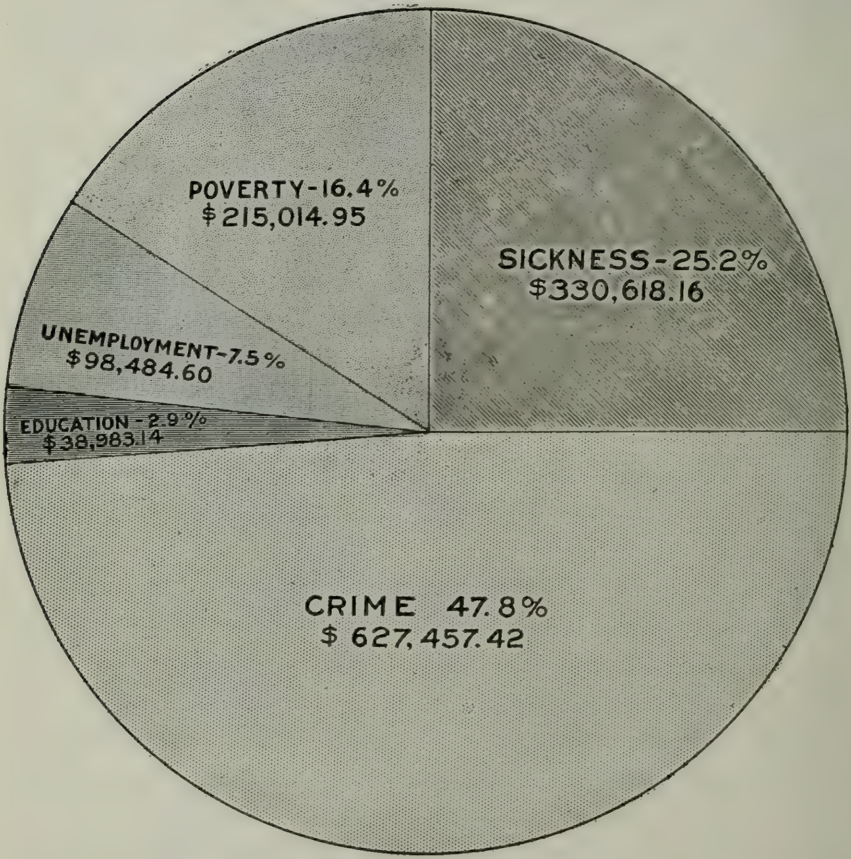
It shows that great sums of money are spent in dealing with the results of ignorance and that small provision is made for removing that ignorance by teaching our language and our laws; that ignorance of our language is at the bottom of much abuse, exploitation, unemployment and hardship.

The best protection is self-protection. The sooner we put the immigrant in the way of caring for himself, the more we are likely to conserve our own energy, and the more effective will be our work. The prime requisite in self-protection is a knowledge of our common language.

To teach English adequately, a great machine must be set in motion—the great democratic machine of education. Evening schools must be opened, proper books must be provided, skillful teachers secured and education extended to such of our foreign-born population as do not speak and read our language. This is the first step in an Americanization program.

WHAT OUR NEGLECT OF THE IMMIGRANT COSTS.

The result of a study in Los Angeles.



NOTE.—The striking feature of this chart is the fact that while $1,271,575.13 is spent in the remedial fields of crime, sickness, poverty and unemployment, only $38,983.14 is spent in the constructive field of education.

Judge Willis of the Criminal Department of the Los Angeles Superior Court says:

"From more than twenty years' experience and observation, while connected with the criminal courts of this State, I am convinced that although a large percentage of crimes are committed by foreign born citizens, yet, in my opinion, a great percentage of such offenses, especially those of a petty character, are committed through ignorance of our laws and customs and could be avoided by proper education and environment."

Judge White of the Los Angeles Police Court says:

"There is no doubt that a very large percentage of those of our foreign population who appear as defendants in our Police Courts are arrested because of ignorance of the law. I do not refer to crimes which involve moral turpitude, such as petty larceny, but to acts or omissions, wrong only because declared so by statute or ordinance."

ESTIMATE OF FOREIGN-BORN IN LOS ANGELES CITY IN 1915.*

Earlier Immigration.

English	11,000	Norwegians	2,000
Irish	5,000	Canadians	10,000
Scotch	5,000	Danes, Swiss, Dutch	3,500
German	11,000		
French	3,000	Total	55,000
Swedes	4,500		

Later Immigration.

(Mostly within the last 10 or 12 years.)

EUROPEAN.

Slavic.	
Bohemians	500
Slovaks	500
Poles	2,000
Russians	7,500
Ruthenians	100
Slovenians	100
Servians	2,000
Croatians	7,500
Montenegrins	300
Bulgarians	100
Total	20,600

Non-Slavic.	
Italians	6,500
Greeks	1,500
Magyars	2,000
Roumanians	200
Finns	250
Lett or Lithuanians	200
Hebrews	10,000
Syrians	500
Armenians	2,500
Spanish	1,500
Arabs, Gypsies, Hindoos, etc.	3,500
Total	28,650

NON-EUROPEAN.

Chinese	2,000
Japanese	7,500
Mexicans	35,000
Total	44,500
Total foreign-born, 1915	148,750

---

*This estimate was made by Mr. Ray F. Carter, who makes the following statement regarding it:

"Absolute accuracy is not claimed for the figures showing the number of immigrants in Los Angeles. The statistics, however, are the results of a careful study of the field.

"The figures are higher as a rule than those of the Federal Census for 1910. I have come to the conclusion that this is not so much an indication of a rapid increase in the last five years as it is of a tendency among some foreign born people to answer the enumerator's 'What nationality?' with, 'American.' This is a hopeful tendency, but it also leads to misapprehension as to the magnitude of our immigrant problem.

"I am somewhat reluctant to give the figures this wider publicity because they are approximate, but even so they may be accepted, I think, as a fair indication of the number of our foreign-born neighbors."

STATEMENT REGARDING STATISTICS.

This estimate of the cost of the foreign population to Los Angeles has been made with as much care and accuracy as is possible, where the investigator had not had the opportunity of gathering exact statistics over a long period of time. In every institution and organization included in the survey, all the available data as to cost and nationalities were used. They were checked by those in authority. A significant number of cases was investigated in order to find out what percentage of all the work done was for immigrants. This percentage of the total annual cost was taken to find the annual cost of the immigrant. For crime, the Commission's agents investigated the two criminal departments of the Superior Court, the failure-to-provide cases in the Divorce Court, the Juvenile Court with the Probation Department and Juvenile Hall, the Criminal Department of the Justice Courts; the jails, county and city, and the City Police Courts and Police Department.

To find the cost of sickness, the following institutions were investigated: The County and City Health Departments, the County Hospital, the city hospitals, all private hospitals which give free medical service, all tuberculosis relief agencies and all clinics and dispensaries.

For poverty, the investigation included the County Charities, and all institutions, public and private (excluding the churches), giving charitable aid throughout the city.

Unemployment shows the cost of the relief work organized by the county for the unemployed in 1914–1915; the Griffith Park Relief Camp and the Municipal Free Employment Bureau.

An enrollment of all the evening schools was taken, to obtain the number of adult immigrants attending. This gave the cost of education for all immigrants over school age.

In making the estimate of the number of foreign-born, page 3, Mr. Carter interviewed as large a number of trustworthy people in each nationality as possible. Consuls, editors, clergymen, bankers, physicians and business men were called upon, and visits were made to all the foreign colonies.

IMMIGRANT EDUCATION LEAFLET NO. 2.

PUBLISHED BY
COMMISSION OF IMMIGRATION AND HOUSING OF CALIFORNIA.
525 Market Street, San Francisco.

LOS ANGELES CITY EVENING SCHOOLS. (Excluding San Pedro and Wilmington.)

Elementary.

	Cost, 1914-1915			Enrollment, 1915-1916		
	Total	Adult immigrant	Per cent	Total	Adult immigrant	Per cent
Alpine	$3,159 02	$1,168 83	37	293	111	37
Amelia	3,147 02	2,832 31	90	220	198	90
Avenue Twenty-one	5,790 94	637 00	11	472	53	11
Bridge	5,275 96	1,793 82	34	205	70	34
Castelar	6,267 15	2,506 86	40	910	372	40
Cornwell	3,449 27	1,103 76	32	320	103	32
Dominguez	69 12	----------	----------	19	----------	----------
First Street	4,374 02	568 62	13	223	29	13
Fourteenth Street	5,371 75	2,148 70	40	245	100	40
Grand	5,439 46	1,903 81	35	268	95	35
Macy	8,469 39	3,133 67	37	471	175	37
Olive	4,934 19	4,934 19	100	152	152	100
Rosemont	2,296 44	----------	----------	133	----------	----------
Utah	5,550 48	3,607 81	65	229	149	65
Totals	$63,594 21	$26,339 38	41	4,160	1,607	
High.						
Los Angeles	$17,723 81	$7,798 47	44	1,119	495	44
Polytechnic	37,848 78	4,541 85	12	3,567	445	12
McKinley	1,213 77	303 44	25	299	75	25
Totals	$56,786 36	$12,643 76	22	4,985	1,015	
Total elementary and high schools	$120,380 57	$38,983 14	32	9,145	2,622	

NOTE.—In giving the percentages above, fractions are omitted.

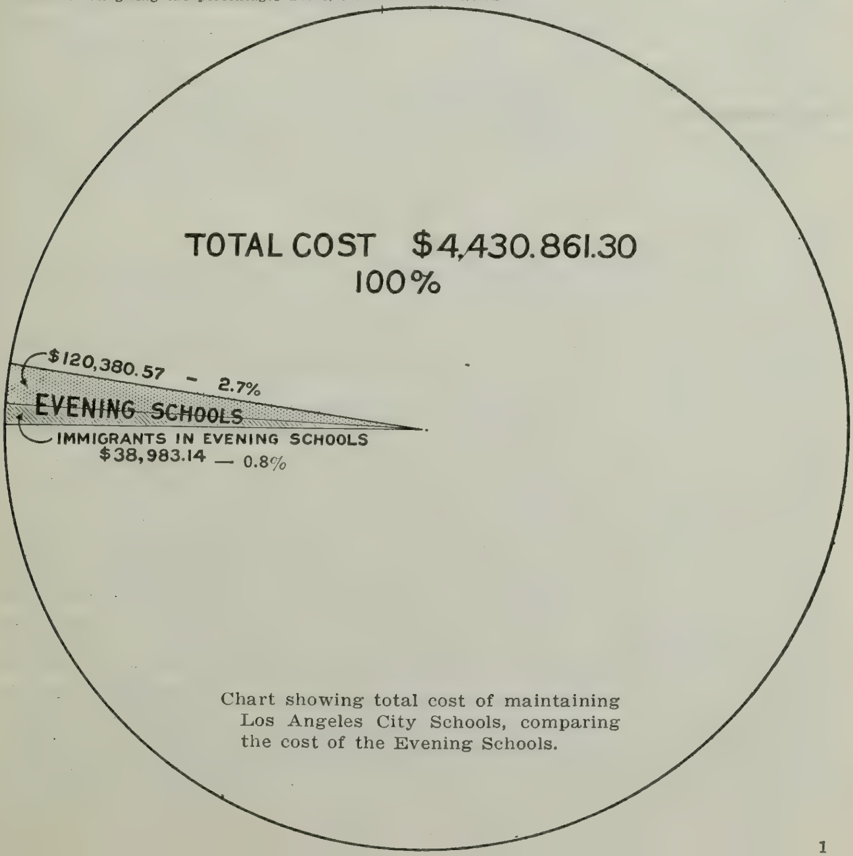


Chart showing total cost of maintaining Los Angeles City Schools, comparing the cost of the Evening Schools.

THE WORKING PLAN OF THE DETROIT CAMPAIGN.

The city of Detroit had a sudden civic awakening when it found that its population had increased, through stimulating its industries, from 400,000 in 1910 to 700,000 in 1915; that 75 per cent of the total population was foreign-born or of foreign parentage and was largely foreign speaking.

The Board of Education called the Board of Commerce and the Employers Association into conference. These bodies decided to make Detroit an English speaking city within two years.

They doubled the appropriations for evening schools and initiated a month's campaign to flood the night schools opening September 13th.

They secured the co-operation of every possible civic and social agency in the city.

They printed a leaflet entitled "Do your father and mother speak English? Take this card home; it will tell them where to go to learn." Inside was a list of night schools.

These were sent out by all children of foreign parentage, from schools, playgrounds, libraries and clinics.

Visiting nurses and social workers distributed them.

They were put in pay envelopes for four weeks. With the pay-checks for mothers' pensions and through probation officers.

Foreign newspapers printed lists and directions.

The clergy of the city gave notices in church and used their personal influence.

The Womens' Club gave much time to securing co-operation and to educating the community to the necessity.

Moving pictures kept "America First" films going.

The employers, generally, gave out the statement: "We will make it imperative for our men to attend night school."

On September 8th employers called their forces together and urged the early learning of English. These were the methods used:

1. **A Preferential Policy**—Men were assembled and told that from this time on men that were going to night school and trying to learn English would be preferred—the first to be promoted, the last to be laid off, the first to be taken back.

2. **Compulsion**—Several companies made night school attendance for the non-English-speaking a condition of employment. The Northway Company established a factory school also and then put up to its men a threefold proposition: (1) To attend night school; (2) to attend the factory school; (3) to be laid off.

3. **Popularizing the Idea**—The Cadillac Company, for instance, worked out a definite program to interest the leaders of the men, and let them do the rest.

4. **A Bonus System**—The Solway Company, for instance, proposed a 2-cent-an-hour increase for all non-English-speaking men that would attend night school.

The result of this effort was that when the schools opened the attendance was 7,000, an increase of 153 per cent.

A large employer expressed interest but said that the nature of his work required long shifts and that it would be impossible to meet the evening school hours. A conference was called and within half an hour the superintendent of the Detroit schools had agreed to furnish ten public school teachers for the 800 men in the plant, **in the factory,** possibly with half the time taken off the men's regular shift.

Effort and co-operation is unabated and public opinion will sustain whatever expenditures may be necessary to make Detroit an English-speaking city in two years

"In this and in many other respects night school work for the immigrant working man and woman becomes absolutely dependent upon a **systematized co-operation between the educational authorities, industries and various social agencies.**"

A PLAN FOR ORGANIZATION IN CALIFORNIA.

The Detroit method of conducting an America First campaign is practical and can be followed in either large or small communities. Organizations wishing to initiate the plan will have to do important preliminary work in surveying local conditions.

Before a general meeting is called, a small committee should prepare a report upon

1. The Number
   Nationality
   and Location of the Immigrant Population.
2. The educational opportunities for those over school age in the public schools,
   the parochial schools,
   the Y. M. C. A.—Y. W. C. A.,
   the settlements,
   the missions.
3. The future plans of the Board of Education.
4. The law governing evening schools.
5. The Civic Center Law.

With the facts developed by such a survey and a thorough understanding with the local school authorities, the committee should have a tentative plan to present for the consideration of a general meeting.

This plan should include suggestions for securing necessary
funds,
publicity,
and co-operation with every civic and social agency to undertake the Detroit campaign of stimulating attendance.

For any further suggestions, organizations are requested to communicate with the Commission of Immigration and Housing of California.

EVENING SCHOOLS—LAWS AND SUGGESTIONS.

The Constitution, article 9, section 6, provides that evening schools of elementary and of secondary grade may be a part of the public school system of the state.

Public schools, except those supported exclusively by the state, may be established legally only by school districts.

Elementary school districts may establish kindergarten and day and evening elementary schools.

High school districts may establish day and evening secondary and technical and intermediate schools.

The governing board of the school district has the power to establish all necessary schools within the school district.

Whenever the board has established more than one school in the school district, both or all of the schools thus established must be maintained for an equal length of time.

A school that is maintained for less than 120 school days in any school year except in the first year of its existence, unless prevented from continuing in session by fire, famine, or epidemic, shall not receive public money for its support.

A school maintained under the authority of the school district and partly under the authority of someone else, shall not receive money for its support from the public treasury.

Anyone fourteen years of age or older may be admitted to an evening school and a child under fourteen years who has a permit to work from the judge of the Juvenile Court may be admitted to an evening school.

The course of study for elementary evening schools is made by the County Board of Education, City and County Board of Education, or City Board of Education.

The course of study for secondary evening schools is made by the high school board of the district.

No one may teach in an evening school unless legally certificated for such purpose. The employment of an uncertificated person as a teacher in evening school deprives that evening school of any right to receive public money, although the person thus teaching may be serving without pay.

The money received from taxation for the support of evening schools is received by the district that maintains the day school and the money used to support the evening school is appropriated by the board that governs the school district.

Attendance at the evening school can not count for more than one half of a school day. Those who attend evening schools seldom attend for the full term that the school is in session. On this account, the average daily attendance in evening schools is usually only about one fourth of the enrollment.

It is highly advisable that, wherever possible, the evening schools shall be established and maintained by the governing board of the school district and in harmony with the laws governing the schools rather than by private organizations as private enterprises.

CIVIC CENTER LAW.*

Section 1. There is hereby established a civic center at each and every public schoolhouse within the State of California, where the citizens of the respective public school districts within the said State of California may engage in supervised recreational activities, and where they may meet and discuss, from time to time, as they may desire, any and all subjects and questions which, in their judgment, may appertain to the educational, political, economic, artistic and moral interests of the citizens of the respective communities in which they may reside; provided, that such use of said public schoolhouse and grounds for said meetings shall in no wise interfere with such use and occupancy of said public schoolhouse and grounds as is now, or hereafter may be required for the purposes of said public schools of the State of California.

Sec. 2. Lighting, heating, janitor service and the services of a special supervising officer when needed, in connection with such use of public school buildings and grounds as set forth in section one of this act, shall be provided for out of the county or special school funds of the respective school districts in the same manner and by the same authority as such similar services are now provided for. Such use of the said schoolhouses, property and grounds shall be granted free; provided, that in case of entertainments where an admission fee is charged, a charge may be made for the use of said schoolhouses, property and grounds.

Sec. 3. The management, direction and control of said civic center shall be vested in the board of trustees or board of education of the school district. Said board of trustees or board of education shall make all needful rules and regulations for conducting said civic center meetings and for such recreational activities as are provided for in section one of this act; and said board of trustees or board of education may appoint a special supervising officer who shall have charge of the grounds, preserve order, protect the school property and do all things necessary in the capacity of a peace officer to carry out the provisions and the intents and purposes of this act.

(NOTE—The Commission is indebted to Mr. Mark Keppel, Superintendent of Schools for Los Angeles county, for assistance in preparing the above digest of evening school laws and the accompanying suggestions.)

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*The establishment of civic centers in immigrant neighborhoods will do much to bring immigrants in contact with native Americans and will aid in their education and assimilation.

IMMIGRANT EDUCATION LEAFLET NO. 3.

PUBLISHED BY

COMMISSION OF IMMIGRATION AND HOUSING OF CALIFORNIA.

525 Market Street, San Francisco.

THE STATE AND THE IMMIGRANT.

A question, which more than once we have had to answer, runs something like this: "Why should the state devote special attention to the immigrant? Haven't we our own poor, our own exploited among the native born? And aren't they just as worthy of protection and assistance as the alien? In fact, doesn't our first duty demand that we serve our own? Should not charity begin at home?"

Our state may justify itself from at least three different viewpoints. The act creating our Commission does not intend that any special favor be accorded the foreigner. But the stranger, ignorant of our laws, our customs, and often of our language, upon arrival finds himself beset by innumerable handicaps. The removal of these tends to place him upon an equality with those longer resident here. There is no favoritism in this; merely an attempt to establish a measure of justice.

Ordinarily, the immigrant is so situated that he becomes an easy prey to exploiters, that he finds it almost impossible to get on his feet economically; misfortune drags him into the overcrowded quarters of our slums, those breeding places of disease, immorality, crime and ignorance; education in English and in civics is almost impossible to attain. Such a man is not on the road to becoming a useful citizen. Indeed, unguided and unprotected, he is liable to become a menace. The correction of these evils is no more than a matter of our own self-protection. Our efforts primarily are in the direction of our own welfare. From this viewpoint, the immigrant is only an incident in our activities.

But the immigrant is not merely a potential menace, from whom we must protect ourselves. With the proper encouragement, he may become a positive source of benefit to our civilization. Each man brings to our shores certain inherited racial and national talents as well as certain personal faculties which we may encourage and develop to our own advantage. The social settlement was the first institution in this land to give practical recognition to the fact that art and philosophy had not departed from the Greek, that music and the sense of legal order had not deserted the Italian, that with the Jew there still remains a worship of the beauty of holiness, a reverence for pure family life, and a deep-seated belief that a nation which breaks faith is as much a sinner as is the individual who does violence to the moral law. The settlement first recognized the valuable contributions that might be made to our culture by immigrants from Germany, from Russia, from England, from France and from the homes of the Norsemen; yes, even from the pettiest of distant lands. And advisedly we might take the cue from the settlement in this respect, to do all within our power to bring out the latent possibilities from even the humblest of the strangers within our gates. Our country, in its early history, borrowed ideals and practices from all peoples, both ancient and modern. Is it not conceivable that the descendants of those who contributed thus might still have something to give?

The state, then, in directing some attention toward the immigrant, is justified in three ways: First, by removing handicaps in the path of the stranger, it tends to place all upon an equality of opportunity; then, by protecting and aiding the foreigner, it most wisely seeks the welfare of the whole commonwealth; and, finally, in encouraging the development of latent racial and personal talents, the state brings out valuable contributions to our culture.

The matter of supreme importance is not what we do at the gates, but what we do after the immigrant is admitted. The vital thing is not a policy of admission and exclusion, but a domestic immigration policy, whether we open wide the gates or keep them tightly closed.

First, for our own security, if not for his, we must protect the foreigner from abuse and exploitation. Then we must remove friction from the path leading to economic settlement. The effort of the national department of labor to organize and co-ordinate the work of public employment offices is an attempt in this direction. Agricultural co-operation and rural credits would help. Then we must make more common the opportunities to acquire a knowledge of English and the rudiments of civics. What sometimes seems to be most important of all is the establishment and maintenance of proper standards of health, sanitation, housing, education, labor and justice.

With wise minimum social, economic, educational and legal standards determined and enforced, we make impossible the existence of many of those practices and habits which are repugnant to our civilization. The immigrant crowds into hovels, thus endangering our health and our economic structure. Well, enforce our five hundred cubic foot law and other housing regulations, and he must be halfway decent. The alien competes unfairly by throwing his women and his children into the stream of labor. Then bring to bear upon him our compulsory education law and our laws governing the employment of women and minors. The foreigner participates in corrupt politics and overloads our courts. Possibly our taking corruption out of our politics and putting more justice into our courts might remedy much of this.

The protection of the foreign-born from exploitation, the building up of proper standards, and the opening up of economic and educational opportunities are what are involved in the conception—a domestic immigration policy.

ILLITERACY.

The present nation-wide interest in overcoming illiteracy should crystallize into a practical program for both urban and rural communities. Each community must work out its own statistics and meet its own needs; but, later, community plans should be co-ordinated into a general state program that will standardize courses of study, textbooks and teachers for adults. Educators are urged to act promptly in making a program to deal with this question in an active and efficient manner.

ILLITERACY IN THE UNITED STATES.

	Per cent illiterate	Basis	Year
Continental United States:			
Total population	7.7	Population, over 10 years	1910
Native white	3.0	Population, over 10 years	1910
Native parentage	3.7	Population, over 10 years	1910
Foreign or mixed parentage	1.1	Population, over 10 years	1910
Foreign-born—white	12.7	Population, over 10 years	1910
Negro	30.4	Population, over 10 years	1910
Indian	45.3	Population, over 10 years	1910
Chinese	15.8	Population, over 10 years	1910
Japanese	9.2	Population, over 10 years	1910

ILLITERACY IN CALIFORNIA.

(California stands 17th in literacy column.)

Number of illiterates in California	74,902

The magnitude of this problem is shown by comparison with the following facts:

Number of pupils in all high schools in California	76,429
Number of teachers in high schools	3,383
The greatest number of elementary pupils enrolled in any county in California (Los Angeles County)	75,903

Iowa has the smallest number of illiterates in proportion to her population of any state in the Union (17 per thousand), and New Mexico has the greatest (164 per thousand).

California has 37 illiterates per thousand of her total population.

ILLITERACY AMONG THE NATIONS.

The following figures were taken from the Department of Commerce, Bureau of Census, Washington, D. C.:

The term "illiterate," as used in the table below, includes all persons unable to write their own language, except in the case of figures marked with an asterisk (*) or letter. In some instances, however, the figures for army recruits are taken from Otto Hubner's Geographisch-Statistische Tabellen for 1913, in which the use of the term "illiteracy" is not in most cases defined.

Illiteracy in Countries from Which Most of Our Immigrants Came, from Revolution to 1880.†

Country	Per cent illiterate	Basis	Year
Belgium	[1]12.7	Population, over 10 years	1910
	7.9	Army recruits	----
Denmark	0.2	Army recruits	1907
England and Wales	1.8	Marriages	1901-10
France	14.1	Population, over 10 years	1906
	4.3	Army recruits	1912
	4.1	Marriages	1901-10
German Empire	[2]0.05	Army recruits	1912
Ireland	*9.2	Population, over 9 years	1911
	8.1	Marriages	1901-10
Scotland	1.6	Marriages	1901-10
Sweden	0.2	Army recruits	1911
Switzerland	[7]0.3	Army recruits	1911

Illiteracy in Countries from Which Our Immigrants Come Now.†

Country	Per cent illiterate	Basis	Year
Austria	13.7	Population, over 11 years	1910
Bulgaria	65.5	Population, over 10 years	1905
	25.4	Army recruits	1909
	58.4	Marriages	1901-10
Greece	[3]57.2	Population, over 10 years	1907
	30.0	Army recruits	No date
Hungary	[4]33.3	Population, over 6 years	1910
Italy	*37.0	Population, over 10 years	1911
	[1]31.1	Army recruits	1910
	38.7	Marriages	1901-10
Roumania	[5]60.6	Population, over 7 years	1909
	[3]41.0	Army recruits	1911
Russia	[6]69.0	Population, over 10 years	1897
	[6]61.7	Army recruits	1894
Servia	78.9	Population, over 11 years	1900
	43.4	Army recruits	1911
	36.7	Marriages	1901-10
Mexico	70.7	Population, over 12 years	1910

[1] Based on number unable to read and write.
[2] Based on number without schooling.
[3] Based on number illiterate; but this term not defined in census report.
[4] Based on number over 6 not reported as able to read and write.
[5] Based on number unable either to read or write.
[6] Exclusive of Finland.
[7] Based on number without any proficiency in writing.
*Based on inability to read.
†Attention is directed to the difference in literacy between the earlier immigration (before 1880) and that of the present time.

(B) CITIZENSHIP EDUCATION.

As has been intimated in some of the preceding discussions, education or training in citizenship is so closely related to the teaching of English that the latter should gradually merge into the former. The learning of English is but the first step toward the goal of Americanization, and, through this newly-acquired medium of expression, high ideals of government should be instilled in the minds of immigrants and they should be equipped with a practical knowledge of American institutions. Consequently, the second part of the Commission's educational program is directed toward the establishment of adequate and standardized classes in citizenship in the public evening schools.

As was pointed out in the last annual report, immigrants can not well be blamed for often regarding indifferently the advantages or responsibilities of citizenship, when they usually receive no training, except the careless and insincere aid of an attorney or other private tutor who ''guarantees'' citizenship for an exorbitant fee. As the best remedy for this situation, the Commission plans to urge the adoption throughout the State of the public school system of citizenship training followed in Los Angeles. This system was described somewhat in detail in last year's report; briefly, its distinctive value lies in the plan whereby the judges of all courts grant citizenship papers to immigrant aliens who attend evening citizenship classes in the public schools for a certain period and who successfully complete the prescribed courses. This encourages attendance at the free evening schools and the new citizens thus admitted should be much better and more uniformly grounded in the fundamental principles of citizenship than those who secure instruction from casual, and often unscrupulous, tutors.

The educational surveys referred to in the first part of this chapter will always include this citizenship feature. The co-operation of the California chapters of the Daughters of the American Revolution has been obtained in making these investigations, and in making subsequent efforts to secure whatever may be needed in the way of citizenship instruction for aliens from local boards of education. This organization has decided to make this cause its principal work for the next year, believing it to be a patriotic duty and an effective way of developing loyalty to the United States. The various chapters of the state organization are collecting data concerning the numbers of unnaturalized immigrants in the various communities, and the educational facilities available for them. This data will be checked by the Commission's investigators and then the local chapters will assist the Commission in, first, inducing the education authorities to do whatever seems necessary in the way of establishing courses in citizenship, and, second, in inducing the local courts to admit to citizenship the immigrants who secure diplomas in these courses.

The Daughters of the American Revolution have also pledged themselves to spread the propaganda of "America First," and to make systematic efforts to urge all unnaturalized immigrants to attend the classes in citizenship. To this end an attractive poster stamp, bearing the words, "The D. A. R. urges citizenship education" are now used by members of the organization on their correspondence, and special literature is being sent out from State headquarters to members and to immigrant societies.

The Commission is also co-operating with the naturalization bureau of the Federal Department of Labor, and with the Americanization committee of New York, in the national movement for more and better education in citizenship. The former is sending to each county superintendent of schools the names of all incoming immigrant adults and children bound for the county, also the names and addresses of all immigrants residing in the county who have declared their intention to become citizens. The bureau also sends to every immigrant, whose address can be obtained, a communication urging him to attend night school and to become a citizen. The Americanization committee is doing its most active work in the eastern states, but it has also made many suggestions to the Commission and furnished it with literature for distribution.

A class of immigrant aliens studying civics, or citizenship, in an evening school in Los Angeles.

One of the greatest needs in this field of citizenship education is a uniform state text-book which will standardize the work and cover local California conditions. For naturalization classes something more than an abstract treatise on civics is required. The application of the text must be personal, and there must be general information concerning laws, customs and things other than political institutions. Such information should be concrete and concerning conditions in California—the state where they live and in which they are vitally interested. The language must be simple and direct, so simple that the text may also serve as reading material for slightly advanced classes in English. As an illustration of how this instruction in the English language and citizenship may be combined, the following little essay is reproduced. It was written as part of class work in English by a Russian Jew, who had been in this country but six weeks and who had attended night school in San Francisco for only five weeks. This particular pupil had received some education in Russia, so the mistakes in grammar are remarkably few, but he proved to be no exception as far as ideals of citizenship were concerned.

> ''What we must do to be a good citizen.
> To be a good citizen we must obey the laws;
> We must always be ready to serve our city, state or country.
> We must be prapered if necessary to give up even our life for our country.
> We must take an interest in the public affairs.
> At election time we must vote for good and honest candidates.
> We should not vote for our own interests alone.
> We should vote for the common good of all.
> We can not sell our vote.
> We can not tell that the laws are bad, because the laws are made by the people for the good of all the people.
> We can not make special laws for some people. We can not make exceptions for a few. We must be honest and good men ourselves.''

The State Board of Education is now co-operating with the Commission in preparing a citizenship manual or textbook along the lines above mentioned. These books will be distributed free, like other state textbooks, to registered pupils, and it is hoped to thus establish a uniform and high standard of instruction which will encourage the courts in officially recognizing the work by accepting diplomas as final evidence of fitness for citizenship.

(C) LABOR CAMP EDUCATION.

The educational program outlined above is designed to benefit only those immigrants who live in cities and towns or within reach of rural schools. The thousands who live in labor camps, and in other isolated places, will have to be reached in other ways. Table V, page 368, group II, shows that in the labor camps inspected by the Commission since July 1, 1915, there were 17,140 foreign-born persons, and that only 1,786, or 10.4 per cent, were naturalized citizens. Table XVI, page 390, group II, shows that 4,371 of these foreign-born adults could speak no English, while Table XV, page 388, group II, shows that instruction was offered in only seven-tenths of one per cent of the camps, and Table XIV, page 386, group II, shows that only 36 per cent of the camps were within a mile of a public school. Attendance at night school can hardly be expected of tired working men when the distance is greater than a mile. These facts clearly demonstrate the necessity for devising some means of teaching both English and citizenship in labor camps.

Furthermore, the data collected in labor camps during the past two years show that, at a conservative estimate, there are some 75,000 people living in labor camps, either throughout the entire year or for a considerable portion of every year. Undoubtedly night schools or classes could be used to good advantage by the majority of these people —and there is an absolute necessity for schooling for the some 5,000 labor camp children. In 53 of the 250 camps where there were children (see Table XV, page 388, group II), the children attended no school. Moreover, difficult as it is to get any information on the subject, 942 cases of definite illiteracy were located in the camps inspected since July 1, housing 36,439 persons. These figures are admittedly far below the actual number, but even a thousand illiterates demand serious attention. Therefore, educational opportunities should be afforded for native-born as well as foreign-born—and the State Board of Education is devoting its attention to this problem.

As for the problem of immigrant education, with which this Commission must deal, a system of correspondence courses has been mapped out, and an experiment will be made during the coming summer. The extension department of the University of California will co-operate with the Commission in organizing such courses in English and citizenship. These courses will be so arranged that the migratory worker can pursue his studies as he goes from camp to camp, and it is also planned to have an instructor visit the larger camps at regular intervals to give personal instruction and keep the interest alive.

(D) HOME EDUCATION FOR WOMEN.

This phase of the Commission's educational program is the last one here presented, not because it is least in importance, but merely for convenience in printing, in order that the "Home Teacher" pamphlet might be bound in at the end of the chapter as the most concrete exposition of the Commission's philosophy of home instruction for immigrant women. In fact, as was stated in last year's report, this was the first educational problem for which the Commission ventured to offer a solution. A bill was drafted by the Commission providing for visiting or home teachers to bring immigrant mothers in contact with and make them a part of American social and civic life. The argument for the bill was briefly stated as follows: "The immigrant mother who does not speak English is even more helpless than the man, for even his failures give him education and slowly help him to adjust himself to the new life. With the woman in her poor home, there are few points of contact with educational opportunity. The Americanization of the children in the public schools often adds to her difficulties. The child takes command of the home and becomes ashamed of the mother. By statistics it was found that this is adding to delinquency and filling the juvenile courts."

The bill was passed by the legislature in the form printed on page 4 of the pamphlet bound in at page 148. This act has been in effect only a few months so that no record of great accomplishments can be given. Moreover, the Commission has not attempted to encourage the general appointment of teachers under this permissive act, as it has wished to carry out a few careful experiments as to the way in which this work should be done. Experiments are being carried on in both San Francisco and Los Angeles in co-operation with the Commission. It is hoped to thus work out wise precedents which can be followed in this new field of education. The following brief report of Mrs. Amanda Mathews Chase, who is acting as a volunteer home teacher in Los Angeles, will serve to show how the plans embodied in the home teacher pamphlet are being worked out:

REPORT OF HOME TEACHER.

"The Amelia Street school district in Los Angeles was selected for my pioneer experiment which is being conducted under the joint supervision of the school department and your Commission.

"In this district, the residence sections are dotted about among warehouses and factories. Many blocks of stores and restaurants are almost exclusively Japanese. There is much small business conducted by other foreigners. A rough estimate of nationalities founded on the school enrollment is that fully half the inhabitants are Mexican, a third Japanese, while the remaining one-sixth comprise Italians, Arabians, Syrians, Poles, Spaniards and Negroes.

A class of Japanese immigrant mothers organized by a Home Teacher in Los Angeles. This picture was taken at the neighborhood school, where the mothers meet occasionally, bringing their smaller children. (See page 139 for report of this Home Teacher.)

A class of Mexican immigrant women, with their babies and small children. This class was organized by a Home Teacher in Los Angeles. The women in the picture are holding copies of the Commission's Home Teacher manual, containing lessons in English. (Copy of Home Teacher manual, opposite page 148.)

''Many families are housed near their business in upper or rear rooms. There are few tenements in the ordinary use of the word. There are many blocks of cottages, usually with separate yards. Gardens have been encouraged by the school, streets are paved, the general appearance of the district is not entirely forlorn.

''There is, however, much more poverty and congestion than is casually apparent. Many cottages are really teeming tenements, with a separate Mexican family in each room. The value of this land is out of proportion to its improvements. On one hand, landlords are obdurate about repairs; on the other, there is much shifting to escape rent.

''After ranging this district as a home teacher for a trifle over three months, I am asked to report to your Commission how far even-song and morning-song agree—that is, how far I have been able to get into actual operation the tentative plans formed last summer. Also, I am requested to set forth any new phases of the matter which have presented themselves in this all too brief experience.

''Thus far I have established friendly relations with 123 families. Among these families I have distributed 482 neighborhood visits. As the district contains 230 families who send children to the school, it will be seen that in five months plus, I have accomplished acquaintance with more than half of my people.

''Two facts, however, give me high hope and courage for the future. One is the splendid possibilities of group work. No home teacher is going to accomplish, in a given time, any sensational number of home visits which take up seriously, the educational work outlined in the law. Each family could be visited only about once in a school month. Nor would exclusive adherence to this method be desirable, supposing it could be made practicable. A neighborhood school is the whole family's university, and the home teacher, as the university extension department, must try as hard to bring the home to the school as to take the school to the home. Every previous idea on this point in our tentative plans has been confirmed and emphasized by these months of actual experience. And with this group plan, the home teacher may easily see every mother in her district at least once a week. Nor will the home visiting be neglected, as she can still have at least half her time free to use for that purpose.

''The other cheerful fact is one which I am sure will be the joyous experience of all home teachers—that after the first few weeks the work acquires an impetus of its own. At present new families are adding themselves to my visiting list at an average of one a day, by seeking me out and dropping their difficulties into my lap. And often new pupils come self-invited.

''My gospel of Americanization must take in different forms to meet varying needs. The Japanese population is prosperous and self-contained, attending its own sick and poor, asking nothing of the school but education. The women need instruction in English and also fresh interests in their rather secluded lives. They are shy and difficult to approach. I began my work among them with the reception at the schoolhouse which was attended only by seven women and two men.

A class of four women was formed to meet twice a week at the schoolhouse for English lessons. By the holidays the class had increased to seven. They gave a class party shortly before Christmas which was attended by thirteen adult Japanese, beside the members. The Japanese school children furnished part of the program; the class itself offered the rest. The Japanese musical instruments which they brought on that occasion are to be tried out for accompanying American songs in future lessons. After their confidence is once given, these Japanese women are most responsive and their merry charm is one of the brightest threads in the home teacher's days. The class now has sixteen active members.

''The miscellaneous one-sixth furnishes about the usual immigrant problem.

''The Mexican one-half absorbs much more than half of the home teacher's time and care, as this people offers all the immigrant perplexities to the highest degree. The immigrants of this race seem to have a specific gravity which keeps them at the bottom of the district melting pot. While the disturbed conditions in Mexico have driven out some refugees of a better class, for the most part, the Mexicans who come to us are the cholos, a primitive people, more Indian than Latin, brought here originally by the corporations for peon labor. Their faults and shortcomings are too well known to need repeating here; they are, generally, child faults with some Latin faults thrown in for good measure. And I love these people too well to enjoy recounting the very just charges against them. They have their graces and their charms, to which nearly every social worker succumbs and becomes their devoted champion. Their sensibilities run far ahead of their intelligence.

''But with such wits as they have, they soon master one important contrast in America. When they offer their labor in the labor market, this country is the 'Land of Hard Knocks.' When they offer their woes in the charity market, it is the 'Land of Easy Beans.' The righting of this condition rests with others than the home teacher. What she can do, however, is to work in close conjunction with the Charities and with their aid to enforce, so far as practical, the rule that all families receiving charity to whatever degree, must at least make the return of clean houses, clean children, and attendance on English classes for adults.

''Yet, these people are *not* a hopeless proposition. But they need education of a peculiar sort—education that shall be disciplinary tonic—that shall give them standards—that amounts to evolution.

''My class of Mexican mothers has increased in numbers from 7 to 40 and the usual rate of attendance has risen from half or less to two-thirds of the enrollment. These women are anxious for lessons in domestic science, but for this they must wait until the completion of the new school building, whose brick walls are now up to the tops of the second story windows. Then they will be taught, among other things, to cook instead of throwing away good vegetables, as was done one Christmas.

''Some other important details of the original plans are also awaiting the completion of the new building. At present it is impossible to have any handcraft work for adults. It is equally impossible for me to exchange hospitality with the district, to be sometimes the hostess instead of always the guest. But all these needs are splendidly provided for in the new quarters. A charming model flat is to be at the disposal of the home teacher every afternoon for teaching and sociability.

''The class has had several class parties. At these the pupils salute the flag, sing 'Home, Sweet Home,' 'America,' and other songs, and give a very modest little program—all in English.

''Sanitation and hygiene have followed the lines where opportunity seemed most immediate. Some friendly advice has been tendered during visits. But largely this division of the work has consisted in taking children, and occasionally adults, to clinics of one sort or another. Each Tuesday I gather up a group of school children, usually about half a dozen, and take them over to the Parent-Teachers' Clinic for treatment of eyes, ears, teeth, and general health.

''These trips are always preceded by explanatory calls upon the parents to gain their consent and co-operation. These are followed by other calls to explain what home treatment and hygiene are required. Thus foreign parents get a clearer idea of their children's condition and needs than if they had taken them on their own account, as it is manifestly impossible for a hurried clinic doctor to pause for giving long, patient explanations in a foreign tongue. The grade teachers declare also, that now for the first time they have the clinic findings to guide them in dealing with these children in the classroom. Two children, for instance, whose condition made them dangerous to others were, after much persuasion, entered in a hospital from which they emerged much improved.

''Incidentally, it is almost necessary that the home teacher be able to speak one or more of the prevailing languages in her district. Otherwise, she must depend upon school children to interpret. At best they carry across only a small portion of what is said, and at the worst, they made freehand changes to suit themselves or what they consider to be the occasion.

''One pleasing illustration of the closer connection between school and home occurred last Christmas. What is Christmas in the kindergarten without its mothers? The children have made their little gifts, learned their Christmas songs, practiced their Christmas games—for the mothers—and without them all the outreaching part of the day falls flat. Mothers have come freely to afternoon exercises but the morning kindergarten had never mustered more than three for theirs. This year the home teacher was invoked and the attendance of mothers went up to twenty-four.

''In my brief experience, the educational and social service phases of the work have been impossible to separate. I take it that my constant and ultimate aim is to educate along the broad, yet definite, lines indicated in the home teacher law. Yet, practically, I came across many families where it is necessary to begin farther back and bring aid of other sorts before education is possible. If the underpinnings of our house are giving way in a flood, that is not the time we take for studying a language, or polishing the brass andirons.

''Two families will illustrate. One, a young married couple with three small children, were on the Charities because the husband was suffering from an industrial accident. He was failing rapidly and his wife feared he would die. Instruction of any sort was impossible while the family were under such a cloud. The home teacher advised open windows and the cough ceased. She connected the man with a clinic and his injured back is nearly well. He can now do light work and will soon be able to support his family as before. Both parents are now studying English. The home teacher suggested a grand holiday house cleaning as part of the general happiness. The idea was well received and a few days later she was proudly invited in to behold a little home shining with cleanliness.

''The other tale does not run so smoothly. Two widows with children—rent paid by Charities—had a little irregular work at a cannery but scarcely earned enough for food. The house was exceedingly dirty. They had been better housekeepers in better times but there was no arousing them without a change in ecomonic conditions. I advertised for day's work in houses, and found them all they could do. They cleaned up their own house with a will, transforming it with soap and mop. Money flowed in and the home teacher thought that the family would soon be paying its own rent. But the wheels took to whizzing backward. I tried to put the women on early cars myself. I furnished a memorandum book and taught the oldest girl to use the telephone. Helpless, inconsequent, and forgetful, they did not keep their appointments and soon lost all the work in spite of my best efforts. The house relapsed to nearly its former state and the wolf again took up his position near the door.

''After all this happened I dropped in for a morning consultation and I freely confess that my mood was not hopeful and I sat silent and passive waiting to hear the same old dreary complaints. Instead, I heard, 'We are going to clean the house this forenoon. We see now how much we need English; we are going to learn it. If you will find us more work, we can do better this time.' Again I advertised for work. Now these same women keep their appointments, find their way on street cars, and attend evening school.

''So I perceived that the previous effort had not been entirely wasted, since it had aroused the initiative of the family. The next chapter is still in the future. I learned my lesson as well, which is that such upward progress is froglike, and that I must be thankful for every foot held after each slipping back.

''Four other families have been persuaded to clean house and to make an effort towards more decent living. One woman, in her enthusiasm, constructed a brick walk through the mud in order to protect her freshly cleaned floors.

"I have distributed some small neighborly relief from the school stores in order to tide over emergencies, such as the temporary illness of the bread-winner, without having the family make formal connection with the organized Charities. These problems of relief and employment loom large in *this* district. The matter of getting people back to self-support and of keeping them there is one of the hardest. I have given many letters of recommendation for work, some to the municipal bureau, and others to the Charities for a chance at the county rock-pile. There is need of a special department or bureau to deal exclusively with the Mexican labor problem and to include educational features, such as driving home the need for English and promptness and keeping one's word.

"During these months I have been guide and interpreter for three cases before the Industrial Accident Commission. The assistant secretary was kind enough to tell me that many foreign cases did not get through for lack of such assistance as mine.

"Just incidentally I have mothered three motherless girls a little as I could with some gain to their health and happiness.

"The semi-wayward young folks in the district are another of the home teacher's responsibilities. She must do what she can for them herself and also try to connect them with whatever helpful influences she may.

"Fortunately, the home teacher may, without hardship, be held to longer hours than a grade teacher, as she deals with fewer units at a time and thus expends her day's stock of energy more slowly.

"There has been helpful, active co-operation from all my fellow teachers and also from all the social agencies in the district, the Charities, clinics, Industrial Accident Commission, and the Brownson House Settlement. The grade teachers report a noticeable gain in scholarship of those pupils whose mothers are studying English.

"If last summer's plans were tentative, this experience is not free from the same quality, as another home teacher in another district might have quite a different set of demands. So I put forth these observations merely for what they are worth as having come to one home teacher in one adventure with the work.

"I have a program to the extent of holding to certain fixed points like group lessons and my weekly trip to the Parent-Teachers' Clinic. I have certain other definite intentions, such as calling on the charity families at least once a week, and on all my pupils who are absent from the group lessons before the following lesson.

"But practically there are so many emergency demands and unexpected appeals, that the more fluid part of my time is subject to constant change. Monotony is the last complaint a home teacher could possibly bring against the work. The call of it is fresh every morning and its possibilities are bounded only by time and endurance."

HOME INSTRUCTION AND NATURALIZATION.

The following letter from the United States Commissioner of Naturalization indicates what an important part home teachers can take in the ''America first'' movement for immigrant women, who are potential voters in California:

''I beg to thank you for the opportunity contained in your letter of the 11th ultimo to offer criticism on the 'Home Teacher Pamphlet,' which I have read with great care and interest.

''The chief room for criticism is that such a wise provision of law, having for its object the education of the mother, used in its broadest sense, has not been universally adopted or followed in the other states of the Union. It speaks well for the progressiveness of the people of California that they have recognized the wisdom and need of organized helpfullness in the home, not, as the pamphlet aptly states, as a matter of private philanthropy, but in the sense that it is a 'fine democratic level of communal possession.'

''When I say that I have no adverse criticism to make of the curriculum outlined in the pamphlet, I do not by any means intend that the plan may not be improved or enlarged upon, but since your plan is substantially similar to that portion of the bureau's 'Outline Course in Citizenship,' which deals with the instruction of foreign-born adult women, it will be obvious that our views as to the methods to be pursued are in accord, differing, if at all, only in details. The bureau's plan, of course, is larger in aspect, since it contemplates the education—still using that term in its broad sense—of adult foreigners throughout the length and breadth of the United States, regardless of sex. The operations of your state will therefore form a most valuable and effective adjunct of the bureau's general plan.

''At such time as the state of comprehension of the members of any of the classes formed under your plan will permit, I would particularly commend a study of a course in civics. I make mention of this because, in your state, women have been endowed with the right of franchise, and it is therefore peculiarly desirable that they shall have some knowledge of the form and structure of government—federal, state, county, and municipal. In that way will the newly enfranchised foreign-born woman who votes be able to cast her ballot with understanding and intelligence, all of which will make for a better and purer administration of the affairs of government.

''If there are any real grounds of criticism of the plan of your Commission, I am sure that the actual experience and contact of the home teachers with the mothers will better divulge them than any other means of which I can think, and needless to say, your Commission will profit by the results which experience alone can bring. As the 'Outline Course in Citizenship' will show, I am heartily in favor of the laboratory method of instruction, rather than the academic method, which involves the exercise of the memory principally, and correspondingly, therefore, your course of instruction, which is founded on the laboratory method, appeals to me most strongly. In the hands of sympathetic and intelligent instructors, I am sure that that method, as applied to the splendid course of training outlined in your pamphlet, will be productive of the best results.

"With renewed expressions of my appreciation of the opportunity you have given me to become acquainted with the plan of operation of your Commission, and with the hope that the results may be as satisfactory as your mode of procedure merits, I beg to remain,

"Very truly yours,

(Signed) "Richard K. Campbell,
Commissioner of Naturalization."

The Home Teacher

THE ACT,
WITH A WORKING PLAN
AND
Forty Lessons in English

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PREFACE.

The act creating the home teacher is the direct result of volunteer, overtime work by teachers in the Los Angeles Neighborhood Schools. They demonstrated to the satisfaction of the Commission that the aims to be accomplished by district visiting can best be achieved by teachers instead of outside agencies.

The law is merely permissive and it is hoped it will come into operation gradually, since the careful establishment of correct precedent is of primary importance. Everything depends upon the pioneer workers being well balanced personalities with an all-around understanding both of the letter and the spirit of the home teacher law. They must not be primarily cooking teachers, sewing teachers, or English teachers, but teachers of improved living.

One object is to bring educational opportunities to the mother direct instead of putting her off with vicarious enlightment through her children: the old way that has proven itself not only ineffectual but actually fruitful of harm.

The plan of work and the forty lessons in English herein submitted are merely tentative. We ask for constructive criticism which will lead to their improvement.

COMMISSION OF IMMIGRATION AND HOUSING
OF CALIFORNIA.

MARY S. GIBSON.
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THE HOME TEACHER ACT.

Chapter 37.

(Statutes of California, 1915.)

An act to add a new section to the Political Code to be numbered sixteen hundred seventeen b, relating to the employment of home teachers.

(Approved April 10, 1915. In effect August 8, 1915.)

The people of the State of California do enact as follows:

Section 1. A new section is hereby added to the Political Code, to be numbered section sixteen hundred seventeen *b*, and to read as follows:

Home teachers.

1617*b*. Boards of school trustees or city boards of education of any school district, may employ teachers to be known as ''home teachers,'' not exceeding one such home teacher for every five hundred units of average daily attendance in the common schools of said district as shown by the report of the county superintendent of schools for the next preceding school year. It shall be the duty of the home teachers to work in the homes of the pupils, instructing children and adults in matters relating to school attendance and preparation therefor; also in sanitation, in the English language, in household duties such as purchase, preparation and use of food and of clothing and in the fundamental principles of the American system of government and the rights and duties of citizenship.

Qualifications.

The qualifications of such teachers shall be a regular kindergarten primary, elementary or secondary certificate to teach in the schools of California and special fitness to perform the duties of a home teacher; *provided,* that the salaries of such teachers shall be paid from the city or district special school funds.

FOREWORD.*

It was a wise person who first said "Charity should begin at home"; it was a wiser one who added, "but should not stay there."

The school people were wise in the days when they said: "The public schools are for the children"; they are wiser now when they say: "The public schools are for the whole family."

An idea seems to be born into the world and then to grow almost like a human being before it reaches a commanding influence. So this idea of the unity of the family for educational purposes has been years in growing.

Before we could achieve the unity of the family we had to realize the unity of the individual child. To begin with, we considered him only as a *mind*. Later we concerned ourselves also with his moral nature and added "morals and manners" to the curriculum. John and Mary might come to school breakfastless, dirty, half blind, and troubled with adenoids, and we did not feel that we could do anything about it. It was not that sympathetic teachers did not view these conditions with sorrow, and with the realization that John and Mary's minds were hampered thereby. It was only that dealing with such matters was not considered a legitimate part of school activity. Little by little we have made John and Mary's bodies our concern—their recreation, their home life, everything about them. We will probably find still more to do for them in the future—nor can we do too much.

Meanwhile we have gradually been taking some account of the remainder of the family. Now, where our school systems are progressive, we have little brother and sister in the kindergarten and the wee babies thrive in the day nursery when the mothers are away at labor. We have "continuation schools" for the big brother and sister at work. The father is drawn into evening school and the Civic Center, either to learn English or to enliven the end of the toiler's day by introducing interests and diversions.

Thus we have reached out for every member of the family except the mother. We have taken it for granted that the foreign mother, particularly, was practically hopeless. She was a queer, outlandish thing, who could only learn through asking of her children at home, and not much even thus. We have not been so unkind as to hold the conscious thought, but we have really tacitly taken it for granted that she was a natural obstructionist, and that when death removed her, the family could move on much more victoriously to Americanization.

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*The above is an address delivered by Mrs. Amanda Mathews Chase, as a special representative of the Commission of Immigration and Housing, at a joint session of the National Congress of Mothers and the Parent-Teachers Association at Oakland, California, in 1915. This address was prepared at the suggestion of the Commission and it so admirably states the Commission's position that it is here reproduced in full.

Now, in California, we are taking this next logical step with our Home Teachers' Law—to educate the mother. The home teacher is a mother's special instructor. To be sure, the law says, ''for children and adults''; but the mother always shares gladly with her children, and so will it be in this case.

The Commission of Immigration and Housing is very grateful to the Mothers Congress and Parent-Teachers Association for their earnest support of this Home Teachers Bill. Now their assistance is needed in putting the law into operation. We hope, first, that they will use their influence to have home teachers installed in their communities. Secondly, after the teachers are at their posts, we hope that these associations will hold up their hands in the work, for, more than any other teachers, do they need assistance.

Suppose a home teacher went forth, merely with her unaided resources, to do the work outlined by this law. In each home she would find a problem; in one, economic difficulties; in another, sickness; in a third, perhaps, that Americanized children have slipped from the control of their un-Americanized parents. What could she do alone but break her heart over the ills she could not help? She needs behind her, not only the school system, but all organized helpfulness—in which the Parent-Teachers Association holds an important place.

She must enter these homes as an envoy from the schools, from the community, from the State of California.

WORKING PLANS FOR THE HOME TEACHER.*

The text is the plain and simple law passed by the 1915 California Legislature. The measure was draughted and proposed by the State Commission of Immigration and Housing. On the initiative of the State Federation of Women's Clubs, it was endorsed by the Women's Legislative Council, which worked for it most earnestly. It received the Governor's signature on April 10th and became operative on August 8, 1915.†

We of the Coast feel it to be a momentous and far-reaching piece of legislation. Not that we claim to have invented the Visiting Teacher. Under many names, she is already, in a modified form, part of the public school system in several cities of the United States. She is employed by the Indian Service, who call her a field matron, while the Indians call her ''the going-about woman'' and wait for her with their troubles. We do claim, however, that California leads in giving the movement state-wide backing.

All honor to the devoted volunteers who have shown what could be accomplished in favored spots, such as the immediate neighborhoods of social settlements. At the same time, they have demonstrated the inadequacy of private philanthropy to meet the whole situation. Much of this semi-private institutional work has reached its seed-time, a noble seed-time, for it has sown itself into the public conscience and the fruitage therefrom is the enlistment of municipalities and states to undertake this same labor adequately. They bring to the work two inestimable advantages—one the resources and organization to make it universally effective, the other the gain of lifting it from being the acceptance of kindness bestowed by one social class upon another to the fine democratic level of communal possession. Thus the home teacher is employed by the people, and to the people her services are due—not donated. This latter consideration is one on which the Mothers Congress has expressed itself strongly and, because the Mothers Congress and Parent-Teachers Association is the one woman's organization which recognized the family as the unit, it is to this organization that the Commission of Immigration and Housing looks for co-operation in launching this pioneer effort—the energizing of this educational activity.

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*The above plans were prepared by Mrs. Amanda Mathews Chase in conjunction with members of the Commission. Mrs. Chase, as the representative of the Commission, presented these plans before the Elementary Education section of the Fifty-third Annual Convention of the National Education Association.

†See page 4 for act in full.

The pressing need for the home teacher is in the foreign quarters of cities, since immigrant education is at present a critical issue between the United States and destiny. As rapidly as may be, however, she will be placed in all congested districts. Our present bill allows no more than this, but the work will, in time, demand its logical extension to wherever, in town or village, living conditions and domestic ideals fall short of our American standards.

But all that will be another story when it happens. In blazing trails for our first year's effort, we need consider only what the home teacher can do in and for a congested neighborhood.

The new law broadens our base of activity in such a school district. Heretofore the cry has been "Americanize the children and they will Americanize the home!" This topsy-turvy method flies in the face of natural social evolution. What it has brought into the home is confusion and often disaster, since un-Americanized parents lose control over their Americanized children who consequently are liable to fall into lawless ways and frequently bring up as delinquents before the Juvenile Court.

The fault does not lie in giving the children too much education, but in dividing the family against itself by bestowing too little on its other members.

Latterly we have been more assiduous about gathering the foreign fathers into evening schools and we have still more sweeping efforts in contemplation for this severely important labor.

The immigrant mother, however, has been left almost entirely out of account. We have ignored the natural home-maker and yet tried to Americanize the home. We now see our error and are undertaking here in California to educate the entire family instead of discriminating against that important member, the mother.

The degree of success which we shall be able to achieve depends largely on the working plans with which we put our new law into actual execution. The act is as explicit as it is the business of such a law to be. Its very elasticity is in its favor if we have the wisdom to use that property wisely in formulating our corollaries.

For corollaries, we must have. A compulsory education law, for instance, is not intended to take the place of a course of study and a school program. Even so, our home education law must be supplemented by instructions to home teachers regarding the presentation of the designated subjects, these instructions roughly corresponding to the grade teacher's course of study. The home teacher should also be provided with a program, even though it be an india-rubber one able to stretch indefinitely at the pull of emergency.

It is not desirable that the school district have two heads. We believe that the status of the home teacher is that of a specialist responsible to the principal of the public school with which she is connected; that she should be part of the field force of an elastic system.

While the bill is noncommittal on the point, it seems natural to speak of the home teacher as feminine since most of the activity outlined is such as would naturally be assigned to women. There is in the field, however, place for a smaller number of men to attend to certain phases of the work, particularly along the survey line, finding out where the men and boys spend their evenings and their money—whether or not and why the saloon is the pleasantest spot in the district—dealing with men's lodging houses and rendering other valuable service along lines not practicable to women—connecting every abiding place with the school.

Now to indicate sketchily a tentative working program for a home teacher.

It would be quite natural for her to wish to be at her public school before nine o'clock in order to confer with the principal and teachers regarding any special children whose homes there are immediate and particular reasons for visiting.

The forenoon would just as naturally be passed in making these visits and others on her own initiative.

At every house her first endeavor should be to win the friendship and confidence of the mother. These visits must be unhurried. If the visitor is being initiated into the very heart of some particular home, its problems and difficulties, that is her time to hear the whole story even though she gets no farther that forenoon.

The home teacher, like the family doctor and the family pastor, is to be a real and intimate possession of the family. May she be endowed with wisdom and grace to be worthy of this high phase of her profession and may she emulate doctor and pastor in her sense of the sacredness of confidence. She must refrain from making the morning's experiences the theme of racy, gossiping narratives to entertain her friends or fellow workers. She will, surely, never use the word "slum," and will be chary of the word "case." We would not like to be "cases," not even to the angels of Heaven, nor would we appreciate hearing those same angels refer to their earthward flights as "slumming expeditions."

The opening wedge into many family situations will be "attendance and the preparation therefor." Indeed, one of our prominent California educators rejoices in the home teacher as a "glorified attendance officer." To read backward into the causes why the children of some particular family attend school irregularly, or in poor physical condition, is to diagnose the weakness and perhaps the tragedy of that family preliminary to the work of social reconstruction.

For this, the home teacher will naturally call to her aid the various ameliorative agencies of the community, the charities, district nurses and the like, as the need of their services is indicated by her investigations. She must not herself be connected in people's minds with the bestowal of material gifts. She will, however, have some share in problems of employment since she will naturally come to know something of the quality of the workers—who can be relied upon—who have proved unemployable; for she must know her field every month of the school year.

Realizing the narrow, limited lives of many foreign women in this country, she will make every effort in her power to connect them with the municipal centers of recreation, playgrounds, parks and libraries.

Juvenile difficulties which the home teacher is endeavoring to settle out of court should take precedence of all other business. It is in ways like this that the need of a flexible program is apparent. It must allow her to adapt herself to the necessities of her own particular neighborhood. It must give her liberty in hours and in days that her people may be served. It must not prevent her throwing herself into any emergency she comes across. She should be permitted to relinquish it only when proper assistance is available.

So much for the morning. Let us now consider the afternoon. Every school located in such a neighborhood as will require the services of a home teacher should have, as part of its equipment, a "school cottage" or its equivalent in housekeeping rooms within the school building. This must be a model American home, small but complete, attractive, but simple and inexpensive.

During the forenoons, this cottage can be used in connection with the grade work in domestic science. But afternoons it should be entirely at the disposal of the home teacher. We doubt the advisability of her actually living here, as it is, after all, only a modified schoolroom, and the teacher must keep in human touch with the outside world; but decidedly it should be her official residence. Here she should be distinctly a hostess, welcoming the mothers as into her own home.

The cottage itself will be a vital object lesson. How can we expect a foreign woman to imitate a variety of house furnishing and housekeeping which she has never seen? Here is something intelligible to go home and copy. Hence the ultimate ideal for the afternoon work will be to have it conducted for groups of mothers assembled in the cottage every school day but Friday; Friday afternoons being reserved for special uses.

At the cottage, the home teacher may be assisted by the special teachers of sewing, cooking and music. In addition to being hostess, she herself will teach English, civics, sanitation and other subjects. Weaving may be included in the cottage instruction. The home teacher should interest herself in fostering such handicrafts as she finds the people have brought from their own countries and in connecting them with a market for their wares.

The sewing should be practical and include garment making, mending and making over.

The cooking taught in the "real kitchen" of the cottage should be confined to simple wholesome dishes. About once a month each cooking class should jointly prepare a complete dinner, set it forth on a white table cloth with flowers in the center of the table and partake of the feast. Yet nothing must be too fine and elaborate for home copying.

In teaching civics to foreigners, the heart must be appealed to quite as much as the understanding. The fundamental principles of our government are such as to arouse patriotism when properly presented. These impressions should be deepened by hero tales, patriotic songs and flag exercises.

The teaching of English to adult foreigners, many of whom are illiterate in their own tongue, is a fine pedagogical art with a psychology of its own. The instruction must be live, practical, interesting, even dramatic. For some lessons the teacher's table will be a miniature grocery store where brisk trading is carried on. Others will introduce games, songs and dialogues. In addition, every class conducted at the cottage must assist the women in acquiring the English language. In English they must cook and sew, sing and weave, and the Home Teacher must recognize and appeal to the dramatic spirit of a play folk.

Now to dispose of the left-over Friday afternoons. Let them crown the labor of the weeks.

One should be for a "Mothers Day" celebration in the assembly room when all the mothers of all the groups are entertained with a program furnished by a different grade each month. There should be an address of welcome by a pupil, songs and recitations honoring motherhood. After the program, the mothers are invited to inspect a display of pupils' work. Refreshments are served by the children. The lesson of seeing their parents the honored guests of the school is a wholesome one.

Another Friday afternoon is needed for an "At Home" in the school cottage when the mothers may display their handcraft, exchange lace patterns, sing folk songs and feel almost as if they had enjoyed an afternoon back in the far lands from which they came.

The remaining Friday afternoons could be given over to a special variety of visiting—the distinctly social call, only long enough for the exchange of amenities. That these calls constitute a tour of inspection looking for evidence of cottage instruction in the houses will be the Home Teachers' professional secret. All improvements will be noted with heartfelt praises. If the visitor has added some special touches to her dress, it will contribute to the joyous spirit of the occasion. As to her ordinary costume, let it be like that of other teachers. Her working gowns can easily be simple and sanitary without emphasizing these qualities to a conspicuous degree. Every family, native and foreign, should be visited, but necessity should place the emphasis.

The home teacher may reasonably be required to spend one evening a week at her civic center, and thus she can do much to keep the neghborhood in touch with the advantages there offered them.

Finally, those who enter this splendid pioneer field must realize the unity underlying the few and simple provisions of the Home Teacher Bill. The general aim for these next years is to put immigrant mothers in command of their own situation by correlating them with the best America has to offer. Hence no visit nor lesson can be limited or literal in its import. It must open out beyond itself into the vision of the whole achievement.

REFERENCE BOOKS FOR TEACHERS.

The House in Henry Street. Lillian Wald.
Practical Homemaking. Mabel Hyde Kittredge.
A second Course in Homemaking. Mabel Hyde Kittredge.
Social Aspects of Education. Irving King.

MAGAZINES.

Immigrants in America Review. 95 Madison Ave., New York.
The Survey. 105 East Twenty-second St., New York.

SUGGESTIONS FOR TEACHERS.

To be of practical use, language must come to the tongue automatically when needed. Hence the teacher should employ endless drill and constant reviews. These, however, should be conducted with so much vivacity and variety that the pupil has no sense of monotony.

Never fail to use actual objects whenever possible.

Encourage pupils to recite with dramatic gesture and expression. These are of the greatest assistance to memory.

The course is divided into four series of ten lessons. Each series should be thoroughly mastered before the next is attempted.

The First Series begins with household actions and objects. It leads to the purchase of staples at a grocery store. During the latter lessons, a "play store" should be conducted. At the close of the series each pupil of the group must be able to make purchases in English.

In connection with this series, the teacher should know the market prices of groceries and compare with what pupils are paying to see if they are being cheated. In presenting the lessons the *real* prices should be used to familiarize the mothers with actual values.

Similarly, the Second Series leads to the dry goods store. The teacher should be equipped with dolls dressed in a model manner, so that they may be instructive in more ways than language. Also these dolls should be provided with nightgowns which should be put on and off during lessons.

The baby doll should have a basket of additional clothes, showing a small but complete outfit of necessities for an infant.

The Third Series has for its unit the expression of personal feelings and family relations. It leads to the social visit.

The Fourth Series deals with the immigrant mother's contact with her American environment in other ways than purely commercial.

This series is composed of "Primer Lessons" intended for memorizing or dialogues.

From them a "graduating" program may be arranged to celebrate completion of this course.

Where pronouns are not all given in verb series, the teacher may supply them for oral drill.

Each lesson must be first taught as ORAL English. A lesson must NOT be used for reading and writing until perfectly mastered orally.

FIRST SERIES.

First Lesson.

Good afternoon.
How do you do?
Very well, thank you.

What is this?
This is a chair.
What is this?
This is a table.

What is that?
That is a bed.

I cook. I cook

I wash. I wash

I sweep. I sweep.

I mop. I mop

I sew. I sew

1, 2, 3, 4, 5.

How many chairs?
How many tables?
How many beds?

Goodbye.

Second Lesson.

$1.00 $.50 $.25 $.10 $.05

We cook. We cook

We wash. We wash

We iron. We iron

We sweep. We sweep

We mop. We mop

We sew. We sew

You cook.	*You cook*
You wash.	*You wash*
You iron.	*You iron*
You sweep.	*You sweep*
You mop.	*You mop*
You sew.	*You sew*

1, 2, 3, 4, 5, 6, 7, 8, 9, 10.

They cook. They cook

They wash. They wash

They iron. They iron

They sweep. They sweep

They mop. They mop

They sew. They sew

Third Lesson.

pound quart pint

She cooks. *She cooks*

She washes. *She washes*

She irons. *She irons*

She sweeps. *She sweeps*

She mops. *She mops*

She sews. *She sews*

Mary cooks. *Mary cooks*

Mary washes. *Mary washes*

Mary irons. *Mary irons*

Mary sweeps. *Mary sweeps*

Mary mops. *Mary mops*

Mary sews. *Mary sews*

1, 2, 3, 4, 5, 6, 7, 8, 9, 10,
11, 12, 13, 14, 15, 16, 17, 18, 19, 20.

Fourth Lesson.

water milk bread meat beans

Do you cook?	Do you cook?
Yes, I cook.	Yes, I cook.
Do you sweep?	Do you sweep?
Yes, I sweep.	Yes, I sweep
Do you wash?	Do you wash?
Yes, I wash.	Yes, I wash.
Do you iron?	Do you iron?
Yes, I iron.	Yes, I iron.
Do you mop?	Do you mop?
Yes, I mop.	Yes, I mop.
Do you sew?	Do you sew?
Yes, I sew.	Yes, I sew.

Do you cook?

No, I do not cook.

Do you wash?

No, I do not wash.

Do you iron?

No, I do not iron.

Do you sweep?

No, I do not sweep.

Do you mop?

No, I do not mop.

Do you sew?

No, I do not sew.

1, 2, 3, 4, 5, 6, 7, 8, 9, 10.

Do you cook?
No, I do not cook.

Do you wash?
No, I do not wash.

Do you iron?
No, I do not iron.

Do you sweep?
No, I do not sweep.

Do you mop?
No, I do not mop.

Do you sew?
No, I do not sew

Fifth Lesson.

cup plate knife fork spoon dozen

A dozen spoons. A dozen cups. A dozen forks.
A dozen plates. A dozen knives.

Can you cook?	Can you cook?
Yes, I can cook.	Yes, I can cook.
Can you wash?	Can you wash?
Yes, I can wash.	Yes, I can wash.
Can you iron?	Can you iron?
Yes, I can iron.	Yes, I can iron
Can you sweep?	Can you sweep?
Yes, I can sweep.	Yes, I can sweep.
Can you mop?	Can you mop?
Yes, I can mop.	Yes, I can mop.
Can you sew?	Can you sew?
Yes, I can sew.	Yes, I can sew.

Sixth Lesson.

Sunday Monday Tuesday Wednesday
Thursday Friday Saturday

Sunday, Monday, Tuesday,
Wednesday, Thursday,
Friday, Saturday

today yesterday tomorrow

Yesterday I cooked.
Yesterday I washed.
Yesterday I ironed.
Yesterday I swept.
Yesterday I mopped.
Yesterday I sewed.

Yesterday I cooked
Yesterday I washed
Yesterday I ironed
Yesterday I swept
Yesterday I mopped
Yesterday I sewed

Seventh Lesson.

stove pan kettle tub wood coal

Tomorrow Mary will cook.
Tomorrow Mary will wash.
Tomorrow Mary will iron.
Tomorrow Mary will sweep.
Tomorrow Mary will mop.
Tomorrow Mary will sew.

Tomorrow Mary will cook
Tomorrow Mary will wash.
Tomorrow Mary will sweep
Tomorrow Mary will mop
Tomorrow Mary will sew

Eighth Lesson.

sugar salt flour eggs rice cheese

I cook the eggs.	*I cook the eggs.*
I wash the dress.	*I wash the dress*
I iron the dress.	*I iron the dress*
I sweep the floor.	*I sweep the floor.*
I mop the floor.	*I mop the floor*
I sew the dress.	*I sew the dress*

Please cook the eggs.
Please wash the dress.
Please iron the dress.
Please sweep the floor.
Please mop the floor.
Please sew the dress.

Please cook the eggs.
Please wash the dress
Please iron the dress.
Please sweep the floor.
Please mop the floor.
Please sew the dress.

Ninth Lesson.

tea coffee soup butter soap oil
pepper potatoes flour

I want a pound of butter.
I want half a pound of tea.
I want a quart of milk.

I want a pound of butter.
I want half a pound
of tea

I want a quart of
milk

How much is butter today?
How much are eggs today?

How much is butter
today?
How much are eggs
today?

Tenth Lesson.

Playing Grocery Store.

SECOND SERIES.

First Lesson.

Colors: red blue yellow green brown
purple black white gray

I am happy.
I have money.
I go to the store.
I buy cloth.
I make a dress.
I like my dress.

I am happy.

I have money.

I go to the store.

I buy cloth.

I make a dress.

I like my dress.

pretty ugly

Second Lesson.

Kinds of cloth: cotton linen silk wool

Mary has money.
Mary goes to the store.
Mary buys cloth.
Mary makes a dress.
Mary likes her dress.

Mary has money.
Mary goes to the store.
Mary buys cloth.
Mary makes a dress.
Mary likes her dress.

light blue dark blue

Third Lesson.

skirt waist coat cape dress hat shoes stockings

I was happy yesterday.
I had money.
I went to the store.
I bought cloth.
I made a dress.
I liked my dress.

I was happy yesterday.

I had money

I went to the store.

I bought cloth

I made a dress.

I liked my dress

long short narrow wide

Fourth Lesson.

vest drawers petticoat chemise
union-suit nightgown

I shall be happy tomorrow.

I shall have money.

I shall go to the store.

I shall buy cloth.

I shall make a dress.

I shall like my dress.

I take off my dress.

I put on my nightgown.

I shall be happy

tomorrow.

I shall have money.

I shall go to the store.

I shall buy cloth

I shall make a dress.

I shall like my dress.

I take off my dress

I put on my nightgown.

Fifth Lesson.

coat vest trousers shirt undershirt drawers
nightshirt suit hat hose

Have you money?
Yes, I have money.
I have no money.

Have you money?

Yes, I have money

I have no money.

Has John money?
Yes, he has money.
He has no money.

work pay-day

Sixth Lesson.

baby baby basket dress nightgown
pinning-blanket diaper skirt

I put the doll by the basket.
Please put the doll in the basket.

I put the doll by the
basket

Please put the doll in
the basket.

clean dirty

Seventh Lesson.

yard foot inch half-yard quarter of yard
long wide

The table is five feet long.
The cloth is a yard wide.
How long is the cloth?
How wide is the table?

The table is five feet long

The cloth is a yard wide

How long is the cloth?

How wide is the table?

Eighth Lesson.

sheet blanket comforter pillows mattress
pillowcase bedstead bedspread

I take off the dirty sheets.
I take off the dirty pillowcase.
I put on the clean sheets.
I put on the clean pillowcase.
I make the bed.

I take off the dirty sheets.

I take off the dirty pillowcase.

I put on the clean sheets

I put on the clean pillowcase

I make the bed

Ninth Lesson.

lace embroidery ribbon thread

10, 20, 30, 40, 50, 60, 70, 80, 90, 100.

Please give me a spool of
black thread number forty.

Please give me a spool of
black thread number forty

Tenth Lesson.

Playing Dry Goods Store.

THIRD SERIES.

First Lesson.

child children living dead years old
name boy girl

TEACHER—How many children have you?
PUPIL—Seven.
TEACHER—Are they all living?
PUPIL—Seven are living. Three are dead.
TEACHER—How many of those living are boys?
PUPIL—Five are boys.
TEACHER—Then two are girls.
PUPIL—Yes, two are girls.
TEACHER—Please tell me the names of the boys.
PUPIL—Juan, etc.
TEACHER—How old is Juan?
PUPIL—Juan is eight years old.

Second Lesson.

father mother husband wife son daughter brother
sister grandmother grandfather uncle aunt cousin

The brother loves the sister.
I love my father and mother.

The brother loves the sister.

I love my father and

mother.

Third Lesson.

Parts of the body: head neck chest arms legs hands
feet fingers toes eyes ears tongue nose

I see with my eyes.
I hear with my ears.
I feel with my fingers.
I taste with my tongue.
I smell with my nose.

I see with my eyes

I hear with my ears.

I feel with my fingers.

I taste with my tongue.

I smell with my nose.

You see with your eyes.
They see with their eyes.
We see with our eyes.
Maria sees with her eyes.
Juan sees with his eyes.

Fourth Lesson.

apple orange cabbage turnip sweet sour hard soft
clean dirty fresh ripe bitter thirsty hungry

Verb—Like.

Teacher—Do you like apples?

Pupil—Yes, I like apples.
No, I don't like apples.

Teacher—Are you hungry?

Pupil—Yes, I am hungry.

Teacher—Is the orange sweet?

Pupil—No, it is sour.

Fifth Lesson.

lace narrow wide thread sell fine coarse

Teacher—Can you make lace?

Pupil—Yes, I can make lace.

Teacher—What size thread do you use?

Pupil—For fine lace I use number 60. For coarse lace I use number 20.

Teacher—Linen thread or cotton thread?

Pupil—I use crochet cotton.

Teacher—How much can you make in a day?

Pupil—I can make a yard of narrow lace. I can make half a yard of wide lace.

Teacher—Do you sell the lace?

Pupil—Yes.

Teacher—For how much?

Pupil—A dollar a yard for the wide lace. Half a dollar a yard for the narrow lace.

Sixth Lesson.

clock watch hour minute early late tardy
night day school sleep wake

What time is it?
It is nine o'clock.

What time is it?

It is nine o'clock.

Seventh Lesson.

house roof room wall window door ceiling
landlord rent fair too high

This house has three rooms.
This room has two windows and one door.
The rent is too high.
The landlord must mend the roof.

This house has three rooms

This room has two windows.

and one door

The rent is too high

The landlord must mend

the roof.

Eighth Lesson.

spring summer autumn winter sun moon stars

The weather is not warm.
The day is cold.
It rains.
The sun does not shine.

The weather is not warm.

The day is cold

It rains

The sun does not shine

Ninth Lesson.

January February March April May June July
August September October November December

When is your birthday?
My birthday comes the
twentieth of October.

When is your birthday?

My birthday comes the
twentieth of October.

Tenth Lesson.

Let us play at Making Visits.

FOURTH SERIES.

First Lesson.

PATRIOTISM.

I love the American flag.
It is my flag now.
I love its stars and stripes.
This flag gives us protection and liberty.
My husband honors it.
We teach our children to love the flag.

Salute.

This is my flag;
It stands for my country;
I will love my flag
And be true to my country
as long as I live.

Second Lesson.

Street-car.

[Teacher arranges chairs to represent two street-cars. Assign a pupil to be conductor for each car.]

PUPIL—I am going to visit a friend. I put on my hat. I go to the corner. I stop the car. I get on. I pay my fare. [To conductor.] Please give me a transfer to Grand Avenue. [Conductor gives transfer.] Where do I change?

CONDUCTOR—Temple Block. [Pupil seats herself in car.]

CONDUCTOR—[Calls.] Temple Block! [Pupil gets off and enters other car, giving transfer to that conductor.]

PUPIL—I want to get off at Ninth Street. Please call it for me.

CONDUCTOR—All right. [Pause.] Ninth Street!

PUPIL—Thank you. [Gets off car.]

I love the American flag.
It is my flag now.
I love its stars and
stripes.
This flag gives us
protection and liberty.
My husband honors it.
We teach our children to
love the flag.

Third Lesson.

A house must not be damp.
We need many windows.
Dark rooms are very bad for the health.
We must keep out flies with screens because flies bring sickness.
Stale garbage is dangerous.
A clean house is a good doctor.

Fourth Lesson.

In the Park.

[Teacher has setting of this lesson as appropriate as possible.]

FIRST PUPIL—Let's go to the park.

SECOND PUPIL—Yes, I am very glad to go.

[They cross room.]

FIRST PUPIL—Now we are in the park.

SECOND PUPIL—The park is beautiful.

FIRST PUPIL—See the flowers!

SECOND PUPIL—Yes, and how sweet they smell.

FIRST PUPIL—Hear the birds!

SECOND PUPIL—I love to hear the birds sing.

FIRST PUPIL—The sun is warm and bright.

SECOND PUPIL—The grass and trees are green.

FIRST PUPIL—I must go home and get supper for my husband.

SECOND PUPIL—So must I. Let us go.

[They return to places.]

A house must not be damp.

We need many windows.

Dark rooms are very bad
for the health.

We must keep out flies
with screens because
flies bring sickness.

Stale garbage is
dangerous.

A clean house is a good
doctor.

Fifth Lesson.

We must eat good food.
We must drink good water.
We must have good milk.
We must bathe often.
We must sleep with our windows open.
We must not stay in the house all the time.

We must eat good food.

We must drink good water.

We must have good milk.

We must bathe often.

We must sleep with our

windows open.

We must not stay in the

house all the time.

Sixth Lesson.

First Pupil—I write a letter. I put it in an envelope. I write the address. I have no stamp. I go to the Post Office. [Goes to "P. O."] I want a stamp for this letter.

Second Pupil—[Looking at letter.] You need a five-cent stamp.

First Pupil—[Hands out money, receives stamp, puts it on letter.] Where do I mail my letter?

Second Pupil—Over there. [Indicates mail slot.]

First Pupil—Thank you. [Mails letter.]

Seventh Lesson.

Visiting the School.

[Establish one pupil as Teacher with dolls to represent children.]

First Pupil—I am going to visit the school. [Crosses to school.]

Second Pupil—Good afternoon. I am very glad to see you. Will you have a seat?

First Pupil—[Seats herself.] Thank you. My son Juan is in your school. Is he a good boy?

Second Pupil—Yes, he is a good boy.

First Pupil—Does he study hard?

Second Pupil—Yes, he studies hard. He is a fine boy. I like to have him in my school.

First Pupil—Thank you very much. My husband is proud of the boy. We hope he will make a fine man.

Second Pupil—I am sure he will.

First Pupil—[Rising.] I will go now. Goodbye.

Second Pupil—I thank you for coming. I am always glad to see the parents of my pupils. Goodbye.

Eighth Lesson.

First Pupil—I want to work.

Second Pupil—What can you do?

First Pupil—I can wash and iron.

Second Pupil—What else?

First Pupil—I can wash windows and clean house.

Second Pupil—Can you cook?

First Pupil—I can do plain cooking.

Second Pupil—What wages do you want?

First Pupil—Two dollars a day.

Second Pupil—What by the month?

First Pupil—Twenty-five dollars.

Second Pupil—What by the hour?

First Pupil—Twenty-five cents.

Second Pupil—Will you come to my house Monday to wash?

First Pupil—Gladly.

Second Pupil—I shall expect you. Goodbye.

Ninth Lesson.

Tea table attractively spread—actual refreshment.

First Pupil—I am expecting company to tea. The tea is in the teapot. The cake is on the plate. Here comes my friend. Good afternoon.

Second Pupil—Good afternoon.

First Pupil—I am glad to see you.

Second Pupil—Thank you. [She removes hat, which hostess puts away.]

First Pupil—Sit down and we will have our tea. [Pours tea.] Do you take cream and sugar or lemon?

Second Pupil—I take sugar but no cream.

First Pupil—Will you have cake?

Second Pupil—Thank you. [Takes cake. Hostess serves herself. They take their cake and tea to a little distance and two other pupils use the tea table in similar manner.]

Tenth Lesson.

Words and music of "America."

Supplementary.

Other songs, such as "Home, Sweet Home."

Games.

For instance, arrange as for spelling match, only instead each contestant must name an English word. Later, sentences may be required.

IV.

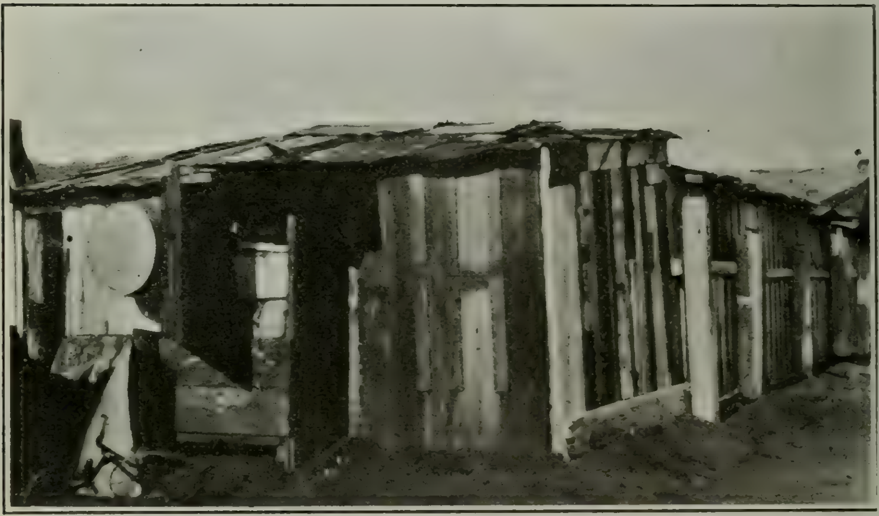
HOUSING.

It has been difficult to perform the duties imposed on the Commission, in its organic act, to inspect housing conditions and to energize the cities in the enforcement of housing laws and in the general improvement of conditions, because the Commission's appropriation is not proportionate to the task. A report to this effect was submitted to the legislature of 1915 and a petition made for a special housing appropriation which would enable the housing department to do this work as thoroughly as it should be done. The petition was denied, however, and it has been necessary to continue the rather limited work with such portion of the general fund as could be set aside for this department.

In spite of financial handicaps, enough has been done during the past two years to prove that every California city or town, irrespective of size, has a housing problem. The general and intensive housing surveys made in cities of all sizes, summarized in last year's report and in the following pages, are gradually convincing all communities that they can no longer deceive themselves by contentedly limiting the discussion of housing problems to the slums of New York and Chicago. This systematic exposition of bad housing conditions is not mere "muck-raking." It is the first essential step in bringing about any improvement, because people generally, and even officials charged with duties in this connection, are not aware of the need of improvement. Until very recently, therefore, the activities of the Commission have been restricted to this particular form of educational work. At pages 278 and 292 are copies of the "A-B-C of Housing," and a "Plan for a Housing Survey," recently published by the Commission as part of this educational campaign.

Believing that there is now a more or less general appreciation of the existence of housing evils or problems in California, efforts in the future will be largely concentrated on utilizing this public sentiment in a demand for action. A persistent campaign will be carried on to arouse the public to demand the enforcement of existing housing laws, to support needed new laws, and to require safeguards for the future in the way of better housing and more careful city planning. As a first step in this direction, attempts are being made to bring about the enforcement of the state tenement house act in places where it has never been enforced (see page 202), and a movement has also been started to prove the necessity for, and secure the passage of a state housing law covering all family dwellings as well as those known technically as tenements.

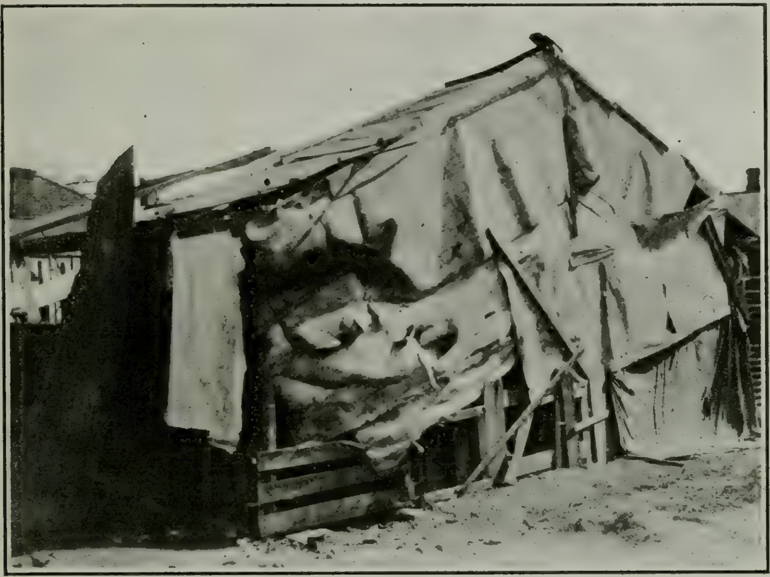
A simple housing bill, covering all dwellings, was drafted by the Commission and introduced in the 1915 legislature, but the opposition was so strong that it was impossible even to get the bill out of committee. There were many supporters of the bill, however, and it is hoped that at the next session of the legislature it will be possible to secure the passage of such a law. Reports of this Commission, and of local officials, indicate that there is just as serious a housing problem in connection with single family dwellings as with tenements. The Housing Commission of the Health Department of Los Angeles, for example, recommends "that regulations be enacted which will control the ramshackle single houses which are unfit for habitation." No better proof of the growing demand for housing laws applicable to all habitations can be given than the following quotation from the report of the



Typical California shacks—built of refuse lumber and roofing. These particular shacks are just outside the limits of a southern city and, therefore, subject to no building laws or regulations.

Massachusetts Civic League, published as an argument for a law proposed in Massachusetts. The entire argument is applicable to conditions in California:

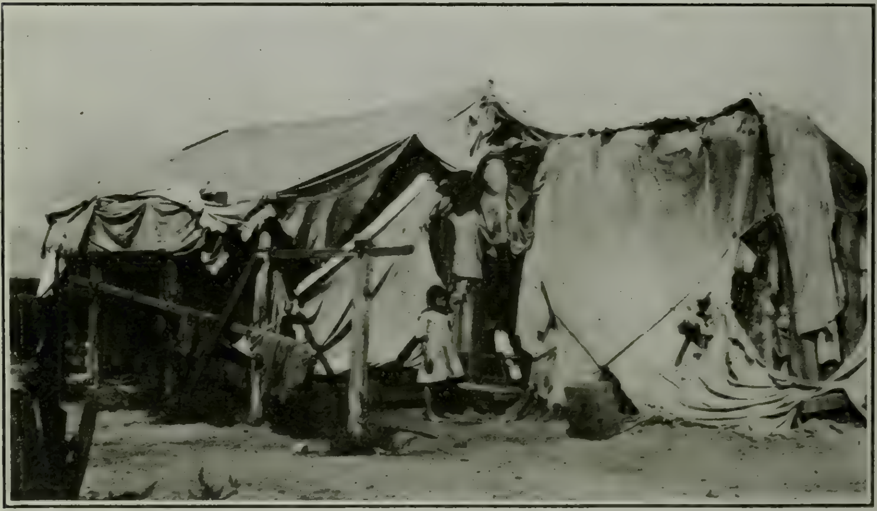
"There is no logic, never has been, in writing tenement house laws. The custom developed because in the earlier stages owners of one-family houses felt that they should not be governed by regulations the same as the owners of multiple dwellings. The shack problem, a serious item in Massachusetts, has done perhaps more than anything else to change the attitude of the people. This law, therefore, regulates all houses used as dwellings. Its provisions will in no way interfere with the activities of ordinary owners of one-family houses. It will interfere in defense of the occupants and of the community when such extreme practices develop as may be found in most of the shack districts. In Boston, to illustrate, there were found shacks with no toilet facilities, the outside privy consisting of a box-like arrangement built over a shallow hole in the ground. The average shack is characterized by an absence of all sanitary provisions and all provisions for privacy. It usually gives its occupants poor protection from the weather and is in every sense a menace to the occupants and to the neighborhood. Small cottages, even of two or three rooms, may be and should be just as sanitary and healthful as larger dwellings. The aim in covering all houses is not to work against the small one-family house, but for it; to



Combination shack and tent, occupied by three men and a child. In rear yard in Los Angeles (but the picture could be duplicated in almost any California city).

guarantee, in other words, that the occupant of a small cottage shall have just as good a home as the occupant of a two or three-room tenement.

"The owners of more pretentious homes will not be interfered with unless they undertake things as unreasonable as are undertaken by some of the shack builders. In the interests of the community, however, many of them are and all ought to be willing to accept the supervision necessary. *The appearance of a shack area does more to destroy health, decency, good citizenship and property values than any other thing that can be introduced. The man with a substantial home should not oppose the appearance of sanitary and attractive cottages, but he should oppose the appearance of filthy, impossible shacks.* This law should, therefore, be advocated by all because it is in the interest of all except those only who desire to prey upon unfortunate people or who are careless and indifferent."

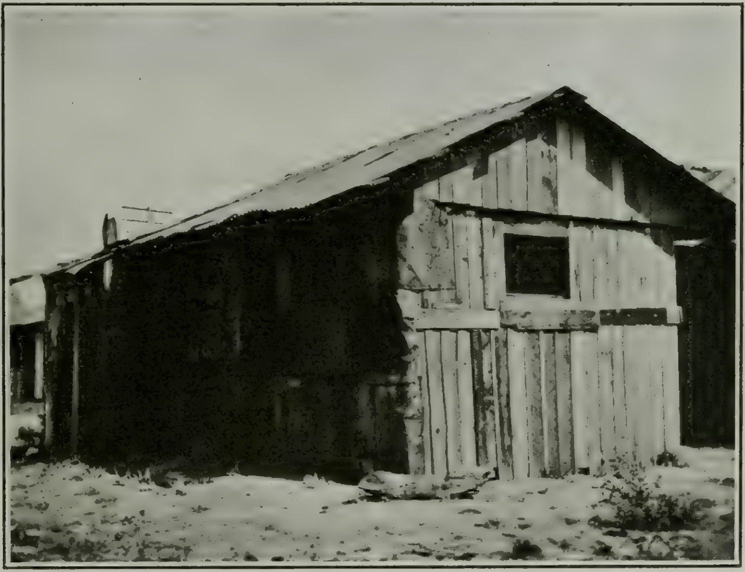


Dwelling occupied the year round by a family of six. (See page 198 of text for discussion concerning the need of housing laws to cover such dwellings.)

Workers in the field of housing are also now almost unanimously agreed that the minimum standard of housing should be fixed by a state law, rather than by local ordinances. Uniformity is thus assured, the careful city protected from the careless one, and the curse of "ward politics" in securing special suspensions of ordinances is done away with. Certainly housing is as much of a state affair as health. To quote from Ernest Freund, professor of law in the University of Chicago, in an address before the Fourth National Conference on Housing in October, 1915: "A housing law should be a state law not merely to ensure the rule of equality but because certain desirable provisions are beyond the usual ordinance power, and because in small cities it may be difficult to have housing codes drawn with sufficient expert asistance."

(A) HOUSING INSTITUTE.

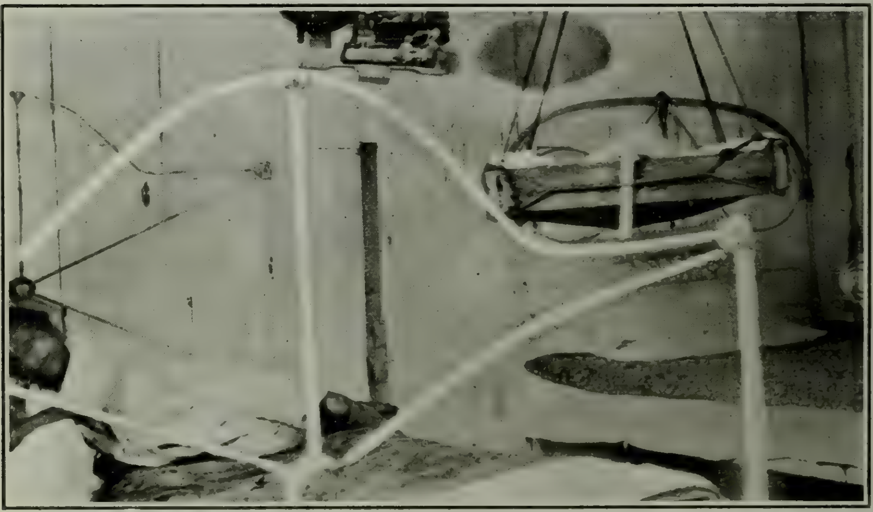
In order to draft a state housing law which will meet the actual existing conditions and which will represent the best thought on these matters in the State, the Commission is now organizing a series of conferences, to be known as the "Housing Institute." Official delegates from the larger cities and towns will meet with the Commission, and with experts employed by the Commission, six or seven times before the next session of the legislature to discuss a general state housing code. It is proposed to make necessary revisions of the tenement and hotel laws, and to combine these laws with a general dwelling house law under one compact, general law or code. The legal and building experts employed by the Commission will submit rough drafts for discussion and will whip into shape the suggestions of the delegates.



A leaky, dirty, and over-crowded two room shack in a city where there are no housing regulations covering such a dwelling. A menace to the cities that may have regulations! Why not a state law?

Legislatures have frankly admitted their inability to deal with the technicalities of housing laws, and it is felt that the report of the Housing Institute will be regarded in the same manner as that of the technical commissions often appointed to study and draft laws. Furthermore, it is hoped that municipalities will feel that they have been consulted in the making of laws affecting local matters and that there will not be the old resentment of "state interference" when a bill is finally presented to the legislature.

If the cities go into this work in a sincere manner, really desiring improvement, the institute will be of great educational value, and it will be possible to obtain the support of even builders and contractors—in place of their opposition. It has been planned to invite representatives from hotel organizations, builders' organizations, and real estate boards, in order to convince them that they should welcome, not oppose, housing laws. The results of the Commission's study will be produced to show that safe, well ventilated, sanitary homes are less expensive and more profitable investments than unsafe, dark, insanitary homes.



Just outside the city limits—no housing regulation or inspection. A flashlight picture in the bed room of a two room shack.

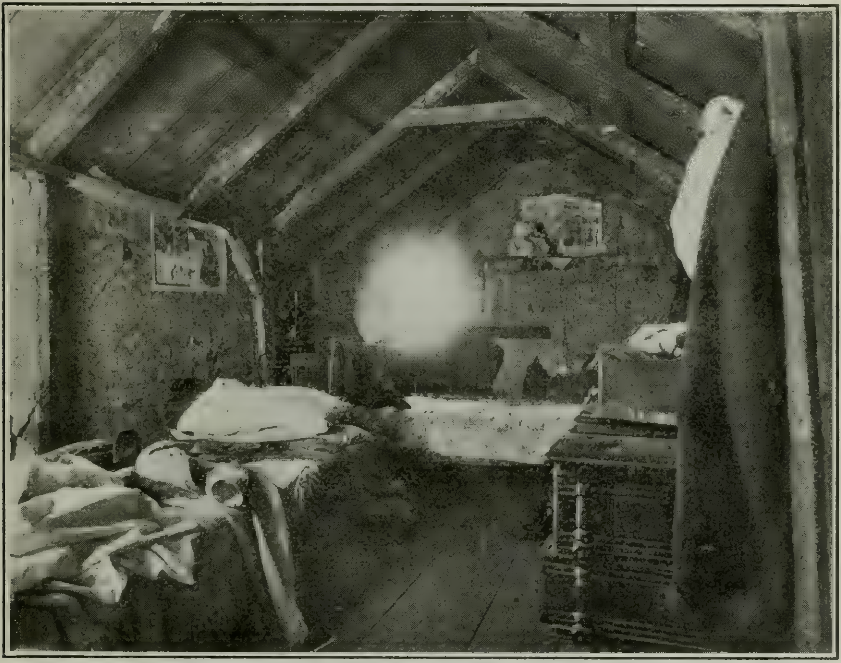
However, this movement is an experiment believed to be the first of its kind in the United States—therefore, the Commission can not indulge in too hopeful prophecies. The co-operative principles of the plan seem sound, however, and it is hoped that California will thus secure a nearly perfect housing code and set an example for her older sister states.

(B) ENFORCEMENT OF TENEMENT LAW.

The legislature of 1915 gave the Commission limited jurisdiction in the enforcement of the state tenement house act by amending section 1 as follows: "Provided, however, that the Commission of Immigration and Housing of California shall enforce the provisions of this act which do not deal with actual construction of tenement houses in all incorporated towns, incorporated cities, cities and counties in the State of

California whenever said Commission finds or discovers a violation or violations of the provisions of this act and notifies the local department of health in writing of such violation, or violations, and said local department of health does not, within thirty days thereafter, enforce this act in the instances specified in said written notice; provided, however, that the said Commission of Immigration and Housing of California shall enforce the act only in the instances specified in said written notice."

Only this rather indirect power of enforcement was granted because sufficient funds could not be appropriated for this department to directly enforce the law in all cities. The Commission, furthermore, believes that the principle underlying this amendment is correct, and that a state department should not be directly and wholly responsible for the enforcement of housing laws. The machinery necessary for such enforcement would be cumbersome and expensive, and, moreover, each community should directly bear its proportionate share of this burden and responsibility. In the few months that have passed since this amendment went into effect it has also been demonstrated that the power granted therein can be used to great advantage. It has been found that local health departments are in no way opposed to the law,



Interior of a one room shack dwelling in a small village—no housing regulation or inspection. Notice over-crowding, torn paper, and general uncleanliness—all of which conditions would be violations of the law if in a tenement house—but here they violate no law.

but are usually handicapped in its enforcement by a lack of necessary inspectors, and, in the two cities where the matter has been presented, the officials seem to feel that if the law must be enforced they might as well have the appointment and control of the necessary inspectors.

The main purpose in securing this amendment was to energize those cities where no effort was being made to enforce the tenement law. Consequently the first two places systematically inspected in this connection were the rapidly growing cities of Fresno and Stockton, and inspectors are now preparing a list of violations to submit to Oakland. San Francisco, Los Angeles, and San Diego have been at least trying to enforce the law, though Los Angeles is probably the only one of these that has an adequate staff of housing inspectors. No effort was made in either Fresno or Stockton to inspect all the tenement houses, but only enough to arouse the authorities to a realization of the fact that tenements existed which need constant inspection, and that there were violations which demand immediate attention. The table on page 204 summarizes the results of the work in these two cities. At the time of writing this report an active campaign is being inaugurated by the Commission in both cities to secure housing inspectors to assist the health officers—the only thing that seems to be needed to insure the enforcement of the law. A discussion of housing conditions in these cities will be found on pages 205 to 227.

Table Showing Violations of the Tenement Law in Stockton and Fresno, Reported by the Commission.

Section No.	Violations (pertaining only to tenements already erected)	Number of instances found in Stockton. 30 houses inspected	Number of instances found in Fresno. 18 houses inspected	Number of houses in which improvements made in Fresno*
58	Dark, unlighted hallway	1	------------	------------
59	Lights not kept burning regularly at night	1	------------	------------
61	More than two families using one toilet	8	10	5
62	Cellars occupied for living purposes	3	2	2
63	Floor and wall surfaces around toilets and sinks not in good order or repair—unpainted	29	19	9
64	Tenements not kept in good order, roof leaking, dampness in walls, ceilings, etc.	35	21	8
65	Dirt, filth, garbage in tenements, yards, courts, etc.	33	4	1
68	Wall paper placed on walls of tenements without old paper being first removed	1	9	------------
69	No proper or suitable receptacles for ashes, rubbish, garbage, etc.	19	5	3
70	Tenement used as a lodging house	9	5	------------
70	Tenement lot or premises used for stable	2	------------	------------
72	Less than 400 cubic feet of air per person in bedroom	------------	1	------------
73	Tenement used for storing, keeping of rags	------------	1	------------
77	Bedrooms have no windows, open on covered courts; kitchens without proper ventilation	21	4	1 new sink and two baths installed.
80	Sinks enclosed with woodwork	12	8	2
	Totals	174	89	34

*Reinspection of Stockton has not been made, therefore, these improvements are all in Fresno. The Stockton health officer reports that he has started to enforce the law, but has no housing inspectors to assist him.

(C) REPORTS OF HOUSING INSPECTIONS MADE BY THE COMMISSION.

I. FRESNO.

(a) Tenements.

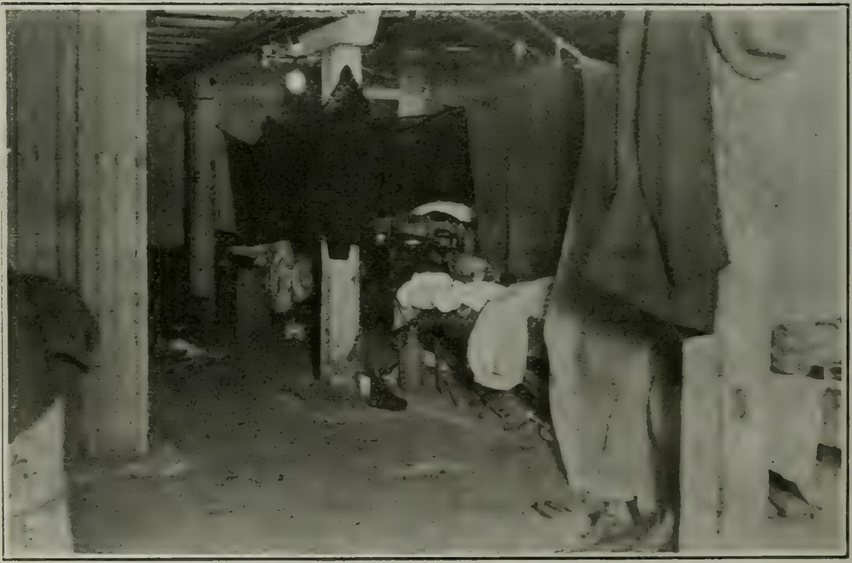
In 18 tenement houses containing 127 apartments and 70 separate rooms used for lodging purposes, 89 violations were found which can be abated at once under the law by the Health Department. As in many other cities, old residences, lacking in sanitary appliances and in bad repair, were found to be the worst type of tenements. Five old buildings which seemed absolutely unfit for occupancy were recommended for condemnation. In two buildings, cellars were occupied for living purposes. Open wooden boxes were generally used for garbage and trash, and rubbish was scattered about many premises. One open garbage pit served two tenements situated on the same lot. Sinks were found lacking in apartments in almost all of these old buildings—the bathroom or a common hall or porch sink serving the entire house.

A roughly constructed tenement house in Fresno. A not unusual type of tenement in the inland cities—such houses are generally in bad repair and insanitary.

Plumbing fixtures were broken and leaking and toilet facilities were especially inadequate. A toilet used in common by many families is usually found to be ill-kept, for no family is willing to assume the responsibility of its cleanliness or maintenance. The following figures show how prevalent this evil is:

(a) One toilet for tenement of 4 apartments.
(b) One toilet for tenement of 4 apartments.
(c) One yard toilet for tenement of 5 apartments.
(d) One yard toilet (unfit for use) for 11 apartments.
(e) Two yard toilets for tenement of 8 apartments.
(f) Two toilets for tenement of 16 apartments.
(g) Two toilets for tenement of 10 apartments.
(h) Two toilets (both leaking) for 13 apartments and 8 single rooms.
(i) Three toilets for 9 apartments and 37 rooms.
(j) Three toilets for 8 apartments and 10 single rooms.

There were 14 inside rooms used for sleeping and kitchen purposes found in 4 buildings.



A flashlight picture of a cellar entirely underground, in the Chinese district in Fresno. Five bunks, all occupied, and unlimited "plank space" for temporary beds.

In December reinspections were made of these buildings and improvements noted in 11 buildings. (See table on page 204.) In seven tenements nothing had been done. Due to the difficulty of locating owners and to the fact that the Health Officer has no regular inspector detailed for the housing work, a more rapid enforcement of the law could hardly be looked for. The Commission is now arranging to assist the Health Officer in obtaining at least one housing inspector. The violations abated included the following:

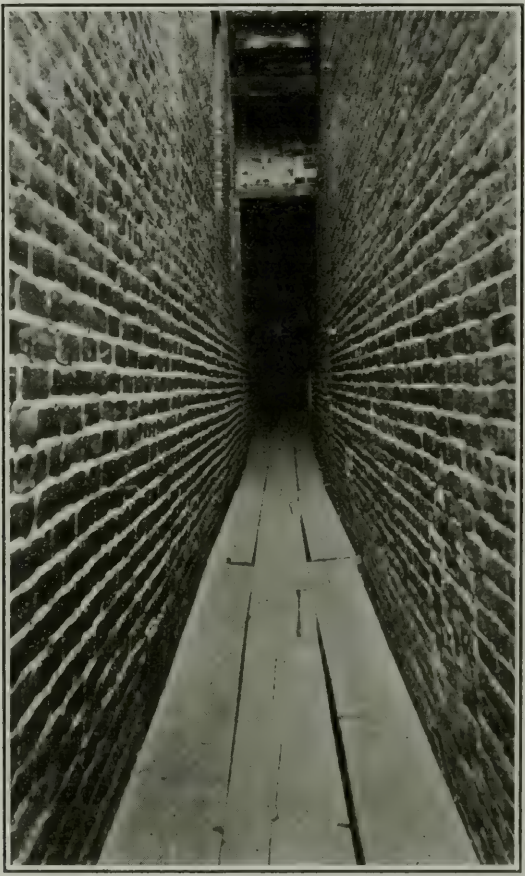
Broken toilets repaired	3 houses
Garbage can provided (but open wood boxes still used)	3 houses
Toilet floors painted and cleaned	2 houses
Rickety stairway repaired	1 house
Rooms repapered and painted	5 houses
Woodwork around sinks painted	4 houses
New toilets installed	5 in 3 houses
Old toilet replaced	1 house
Woodwork around sinks removed	2 houses
Cellars closed as living quarters	2 houses
Roof repaired	1 house
Screens repaired	1 house
Sink installed	1 house
New baths installed	2 houses
Yard cleaned	1 house

Although nothing had been done to the worst tenements found (in two cases the owners had entirely ignored the notices from the health department and one owner, an Armenian, pleaded extreme poverty as a reason for having done nothing); yet the effort made is a beginning in the right direction. Two owners who had not done anything, had, however, indicated their intention of complying with the law at the time of reinspection. The Health Officer considered the educational value of even this small attempt very great and hoped to finally establish the enforcement of the housing laws on a more scientific basis. At the present, a lack of inspectors makes this practically impossible, and although the building department has enforced in the past and is at present zealously enforcing the law in new buildings, the health department has no means of passing on the permits granted for new buildings or to carry out the law in connection with granting certificates of occupancy or licenses for tenements. To successfully meet the requirements of the tenement house law in regard to new buildings, to enforce those sections pertaining to existing buildings, and to enforce the hotel and lodging house law, at least one inspector should be immediately provided for the health department.

(b) Dwellings Other Than Tenements.

The housing inspections in Fresno in September and October. 1915 covered single and multiple dwellings not included in the legal definition of tenements. The houses inspected were in scattered sections, chiefly in those occupied by immigrants.

It is a regrettable fact that there was a decided change for the worse in the outward appearance of these districts since the survey made by the Commission in July, 1914. In 1914 the yards, alleys, and streets were clean and well kept, although generally the housing conditions were deplorable. However, this year these same sections presented an appearance of untidiness, and neglect was everywhere apparent. Back yards were strewn with rubbish and garbage; alleys were overgrown with weeds and littered with tin cans and filth of every kind, including manure from the numerous stables on both sides of the alleys. In the so-called "Russian quarter," between Railroad avenue and G street, the manure problem is particularly bad, for almost every house has a stable in the rear for either a cow or a horse—or both. The large manure piles in these alleys afford breeding places for countless flies throughout the long summer. The alleys between H and I, San Benito and Monterey, A and B, Tulare and Kern, E and F, Fresno and Merced streets, are also objectionable. The large number of rabbits kept by many families in these closely built up districts of the city constitutes another obvious nuisance.



A time exposure in a dark, narrow passageway between two buildings in the Chinese district in Fresno, used as an entrance to some five family apartments.

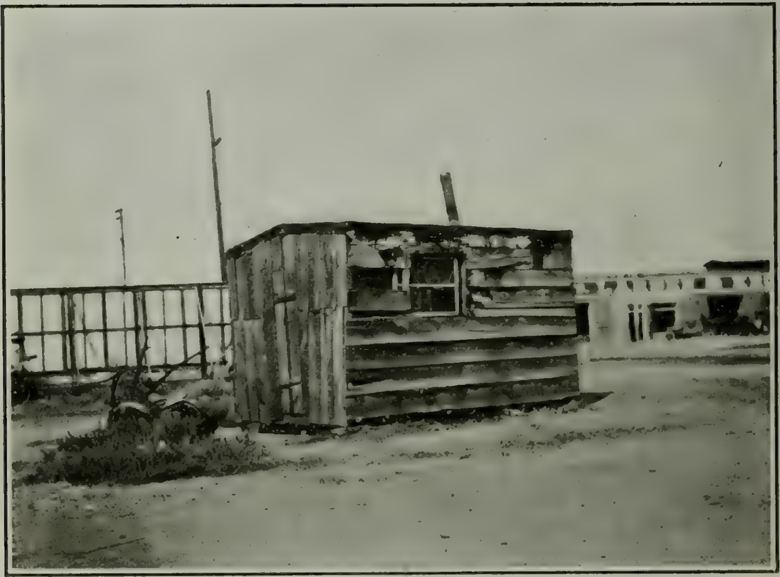
The accumulation of garbage in open pits, or in piles in the yards, is a common and dangerous practice in Fresno. These garbage piles afford abundant food for the flies bred in the manure piles. Sanitary garbage cans seem to be unknown—the city having no regulation requiring them—and their use is brought about only by persuasion on the part of the sanitary inspector. Because of the intense heat during the summer months, this lack of garbage disposal becomes then a very serious matter. The tenement house law requires sanitary garbage cans for all tenements, but the same sort of regulation should apply to all other dwellings.

Another matter which demands attention is the regulation of the public camping grounds a few blocks out of the business district. As many as six different vacant lots were found where "wagon" families camp for a night or more. Some of these lots are rent free, others are not. However, as neither water nor toilet facilities are provided on these lots, conditions often become most insanitary, and the campers become a great nuisance to the surrounding neighborhood. Many complaints were made to the inspector by residents in the vicinity of these grounds. Some of the campers are almost permanent residents, as the same tents and wagons were noticed on the grounds at B and Fresno streets for several weeks. These campers, who wander from place to place, looking for work during the summer months, must be taken care

A motley collection of shacks in a house court arrangement in Fresno. Interiors in insanitary condition. (No house court or dwelling house laws.)

of, but, at least, some special place, with proper water, toilet and other sanitary facilities should be provided or required by the city.

Most of the privy vaults found in 1914 are still in existence, especially in the Russian quarter. Now that sewers have been laid, the houses on Railroad avenue should have properly connected toilets. One vault, in disgustingly filthy condition, located in a rear yard on Monterey street, is really a public nuisance, and should be immediately removed. Patent toilets have been installed in the house on this lot, but the old vault is still being used. As soon as possible a definite effort should be made to abolish vaults wherever sewer connections are possible.

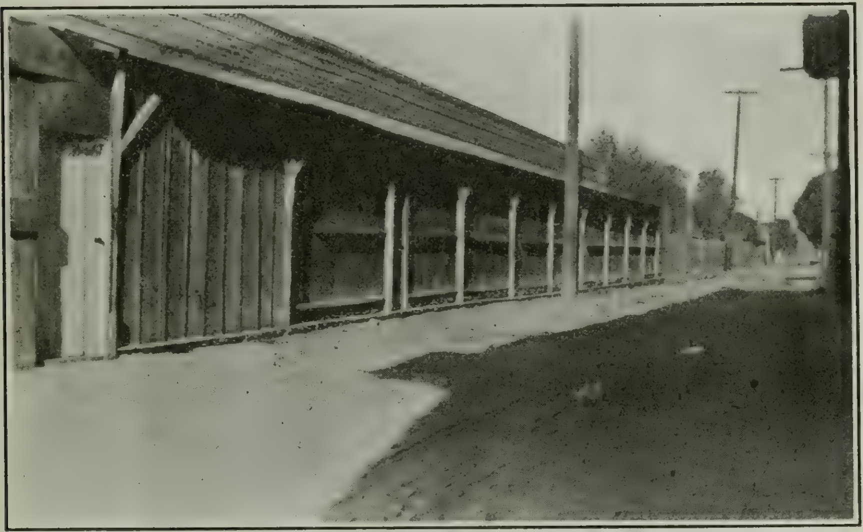


Shack in Fresno. Unregulated as to construction and sanitary maintenance. A rather common type of dwelling in the newer California cities.

Equal in importance to the general external cleanliness and sanitation is the cleanliness and repair of the interior of the houses. One of the things noticeable in merely passing through the foreign sections of the city is the confusion of shacks on a single lot. Rear, alley shacks are the rule instead of the exception, and too often two and three houses are located between the front and rear houses. Dilapidated old shacks built of odd pieces of wood (the typical Mexican shack found in the southern part of the State) have become very numerous in Fresno. These shacks are not only in bad repair but lack all sanitary conveniences and are absolutely unfit for occupancy.

Toilets and yard hydrants are used by several families in innumerable instances. The house court, with its attendant evils of lack of privacy and regulation, is becoming all too common in Fresno. (A house court is usually defined as: "three habitations or more built about a court on a given area of land.") If this type of house is to continue its popularity in Fresno, better provision should be made for sanitary conveniences and general cleanliness.

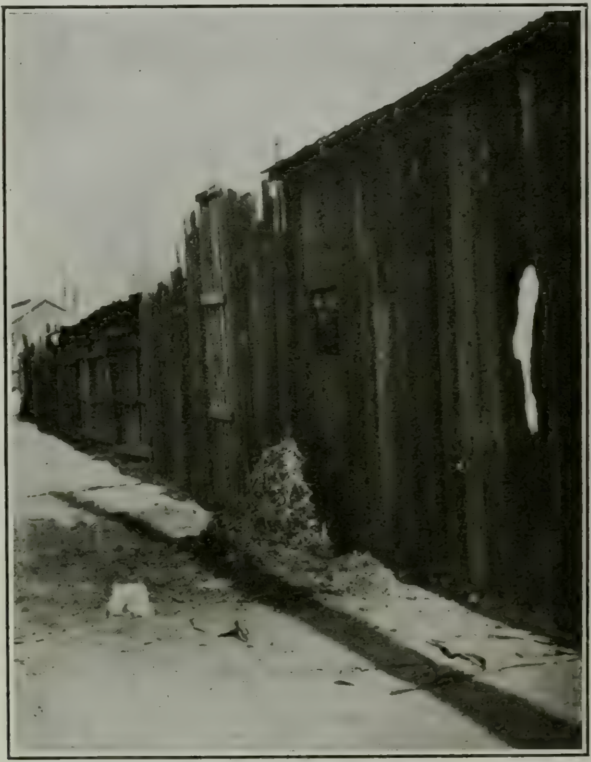
The one and two-room shacks are to be found everywhere, most of them in bad repair. The walls in particular are in filthy condition—paper torn and plaster broken and alive with cockroaches. Floors were found worn and broken—really dangerous to the occupants. Windows and screens are usually broken, the stairs rickety, the roofs leaking. *Yet the rents always remain the same.* Of the 110 places inspected, 105 were found in a bad state of repair. Eighteen dark rooms were found, some opening into other rooms, others without any window whatever. These rooms, if in tenements, would be a violation of the state law, yet they are as dangerous in single houses. Ten of these rooms, located in apartments facing the alley between Tulare and Mariposa streets, from E to F streets, could easily admit air and sunshine by removing the high board fence which closes in the porches upon which the rooms open.



This high, board fence and "lean-to" roof cuts off all light and ventilation from the back rooms of five two room apartments in the brick building—Fresno.

In the Japanese section many more inside rooms were found, and, from a casual observation of this district, it would appear that conditions are almost as bad as in the Chinese quarter. (Detailed report on page 214.) Especially congested is the block between the alley to

F street, Tulare and Kern. Many of these buildings come under the tenement house law, but at least the further building of back-yard shacks and rear additions should be prohibited for fire protection, if for no other reason. On the corner of G and Kern streets a Japanese conducts an underground lodging house. The cellar is totally underground, has absolutely no ventilation except the street entrance, and the floor is covered with long platforms. For ten cents, a Japanese carrying his own blanket, may have the privilege of floor space for the night. Nothing else is furnished. Such places are fine breeding places for tuberculosis and should be prohibited by law.



An alley in the Russian quarter in Fresno. Manure is thrown from many stables in this manner and allowed to accumulate in large piles.

Sanitary conditions were found to be bad in almost all dwellings, principally caused by lack of proper plumbing fixtures. If there are no sinks, water from the yard hydrants stands in pools, and waste water is thrown into the yard. Baths are unknown in the small shacks or the old worn-out houses. Owners often are holding such property for future business purposes and refuse to install plumbing or to make repairs because they intend to remove the buildings in five or ten years. In the meantime the rental pays taxes.

The conditions shown in the table on page 213 clearly demonstrate the need for legal regulation of these dwellings and the need of constant inspection. Such regulations should cover all dwellings or buildings in which persons live. For the enforcement of these regulations, the Board of Health should be provided with much-needed inspectors—not only to enforce such ordinances but also the state tenement and hotel laws, as the number of tenements and lodging houses in the city is rapidly increasing.

Conditions in Single Family Dwellings, and Multiple Dwellings, Other Than Tenements.

Fresno—September—October, 1915.

Total number of separate family habitations inspected	110
Number of habitations in bad state of repair	90
Number of habitations with broken or insanitary plumbing	24
Number of habitations without sinks	50
Number of habitations with toilet used by two families	21
Number of habitations with toilet used by three families	10
Number of habitations with toilet used by four families	13
Number of habitations with toilet used by five families	13
Number of habitations with toilet used by six families	5
Number of habitations with toilet used by ten families	9
Number of habitations with toilet used by eleven families	2
In one instance only two toilets were provided for 16 habitations.	
Number of filthy rear yards	38
Number of habitations without garbage cans	105
Number of habitations in filthy condition	68
Number of dark inside rooms	16
Number of rooms to family:	
31 families living in one-room habitations.	
33 families living in two-room habitations.	
19 families living in three-room habitations.	
15 families living in four-room habitations.	
10 families living in five-room habitations.	
2 families living in six-room habitations.	
Number of habitations occupied by Italian families	6
Number of habitations occupied by Spanish families	5
Number of habitations occupied by Armenian families	15
Number of habitations occupied by Mexican families	36
Number of habitations occupied by Greek families	1
Number of habitations occupied by Japanese families	6
Number of habitations occupied by Chinese families	5
Number of habitations occupied by German families	1
Number of habitations occupied by American families	12
Number of habitations occupied by Russian families	1
Number of habitations occupied by German-Russian families	1
Number of habitations occupied by Negro families	7
Number of habitations vacant	14

(c) Chinatown Housing.

Chinatown covers an area of two blocks located in the center of Fresno—on one side the business district, on the other, the poorer foreign section. As the children from Chinatown attend the same public school as the children of other nationalities, the danger of spreading diseases which result from bad living and housing conditions in Chinatown, is greatly increased. The hundreds of dark, damp cellars and totally dark and unventilated rooms in this district are a menace to the public health. Moreover, the almost solid mass of buildings, in the rear of which there are a maze of narrow passageways and a jumble of wooden porches, kitchens and outhouses, makes this section an ever-present fire menace to the city.

Large manure pile in rear of dwelling in Fresno. A breeding place for disease-carrying flies.

A house to house inspection was made as far as possible, but many places are constantly locked. Of the 177 apartments inspected, 92 were cellars, totally underground, and 63 of these cellars were found to be occupied, containing 224 rooms and 350 bunks. Often, instead of separate bunks, there were long, wooden platforms, covering almost the entire floor. The remaining 29 cellars were either vacant or locked. In the total number of places inspected, 436 dark, windowless rooms were found, containing 726 beds and bunks. This is not, however, the complete number, as many rooms were locked.

The plumbing, as a whole, was found in fairly good condition, this being due to the fact that in many places new plumbing had recently been installed by order of the plumbing department of the Board of Health. However, the space under sinks was found in many instances to be in filthy condition. Unventilated toilets, opening into kitchens, were numerous, and most of them were in filthy condition.

Rats abound in this section, thriving under the wooden floors in cellars, kitchens, in the mazes of passageways, yards and porches. This condition can easily be remedied by cementing all yards, cellars and passageways.

Several of the cellars now occupied are in violation of the State Tenement House law, and, under section 62, of that act, all such cellars can immediately be closed. However, it is difficult in many instances to determine which of these houses are tenements, and, as many cellars in other buildings are likewise occupied, a general law should abolish cellar dwellings.

Garbage and rubbish in tenement house yard, Fresno. (Cleaned up and additional covered containers provided at time of second inspection by Commission.)

In this brief report on the housing and sanitation of Fresno's Chinatown, all minor details are omitted. The conditions described in the preceding paragraphs are such flagrant abuses of all rules of health, and so obviously dangerous, that any lengthy compilation of details would only detract from the force of these facts. In the more detailed report herein on the Chinatown section of Los Angeles, the close connection between the health of all the residents of a city, and the bad housing conditions in the Chinese quarters, is discussed at length, but the connection is really quite apparent. Fresno undoubtedly should give heed to this situation and start a general clean-up of this section, as a protection against bubonic plague, tuberculosis, or any of the multitude of diseases that might develop there and spread throughout the entire city.

II. STOCKTON.

(a) Tenements.

(1) OLD BUILDINGS.

In November, an inspection was made of 44 tenements in Stockton. These 44 houses contained 338 apartments and 113 separate rooms used for lodging purposes only. In 30 of the buildings inspected there were found 174 violations of those sections of the State Tenement House Act (see table of violations, page 204) which pertain to old buildings, and which, under the powers delegated to the health department of the city, should have been corrected within one year of the passage of the act. These 174 violations, pertaining chiefly to sanitation and ventilation, are such as require immediate abatement irrespective of the date of erection of said buildings.

The three cellars found occupied for living purposes contained eight apartments and were of the following heights above ground:

1st cellar—1 apartment, ceiling 2′ 11″ above ground level.
2d cellar—3 apartments, ceiling 4′ 9″ above ground level.
3d cellar—4 apartments, ceiling 5′ 6″ above ground level.

Toilet accommodations were found inadequate, especially in the old residences converted into tenements where new plumbing fixtures are seldom provided to meet the new conditions. Examples of inadequate toilet facilities were as follows: Two toilets for four apartments and 16 single rooms; three for 13 apartments and 11 rooms; one for five apartments; two for seven apartments and 20 rooms; one for eight apartments; one for five apartments; one for three apartments, and one for five apartments and three rooms. Where four or more families use a common toilet, compartments were found in filthy condition, with the bowls and pipes often broken and leaking. In one building toilets of seven apartments were located in kitchens and had no other ventilation than the door opening into the kitchen. In 65 apartments in the 30 old tenement houses there were no sinks. To show the deplorable lack of bathing facilities the following short table of bathrooms in various buildings is illuminating:

3 baths for 12 apartments.
No baths for 2 apartments.
1 bath for 18 apartments.
1 bath for 6 apartments.
1 bath for 7 apartments.
2 baths for 7 apartments.
No baths for 8 apartments.
1 bath for 3 apartments.
2 baths for 8 apartments.
2 baths for 3 apartments and 16 rooms.
No bath for 3 apartments.
3 baths for 13 apartments.
1 bath for 3 apartments and 9 rooms.
1 bath for 8 apartments.
No bath for 7 apartments and 11 rooms.
1 bath for 5 apartments.
1 bath for 7 apartments.
2 baths for 4 apartments.
1 bath for 7 apartments.
2 baths for 8 apartments.
No baths for 6 apartments.
No baths for 4 apartments and 14 rooms.
1 bath for 8 apartments.
1 bath for 4 apartments and 9 rooms.

Garbage disposal in tenements was found to be most unsatisfactory. Of the 30 buildings inspected, 19 were without suitable or sanitary cans for rubbish, garbage, or refuse. Wooden garbage chutes were frequently found not only in filthy condition, but unconnected with a proper receptacle at the base of the chute. Filth and garbage was found within tenements and littering up yards and court areas. One of the city sloughs has become the rear yard for numbers of tenements, and also a general dumping ground for the tenants of these buildings.

Interior repair and cleanliness of buildings is likewise bad. Several old buildings have become so dilapidated, both inside and out, that they are hardly worth repairing. Any attempt toward cleanliness on the part of tenants is easily discouraged by torn wall paper hanging in large patches, by broken and falling plaster, by worn and rough floors covered with old rag carpets. One tenement of four apartments was found with exterior walls partly torn away and broken and the building was actually breaking into two separate parts on the rotted underpinnings. With any extra jar, the building would easily collapse and endanger the lives of the occupants.

Inadequate fire protection in these crowded tenements is especially serious. In one three-story frame tenement, containing 15 apartments, a 35-inch stairway situated at the extreme front was the only means of exit from the building which extends the entire length of the lot. In another three-story tenement of six apartments, the only entrance to the second and third floors was a rickety outside wooden stairway located in the rear of the building. Several other three-story frame buildings had only one stairway and no fire escapes.

One of the worst violations of the law was that of section 77 pertaining to inside rooms. Violations of this section were found in 21 out of the 30 houses, as follows:

(*a*) Number of inside kitchens with no proper ventilation	14
(*b*) Number of inside bedrooms opening to halls or other rooms	30
(*c*) Number of inside bedrooms and living rooms opening on courts roofed over with skylights	7

(2) New Buildings.

Thirty-two important violations pertaining to construction were discovered in 14 of the 44 tenement houses inspected. Most of these were erected since the passage of the law in 1911, and five were in course of construction or alteration, at the time of inspection. These violations prove that the city has made and is making no attempt to enforce the law in regard to new buildings. The following table shows the nature of the more serious violations:

Section of law	Type of violation	No. of buildings violating
9	Insufficient or no rear yard space (inner lots)	5
10	No yard for tenements on corner lots	3
12	Court or vent shafts not open to sky	1
14	Insufficient widths and areas of inner courts	2
15	Insufficient widths and areas of lot line courts	2
16	No intake to inner or lot line courts	2
17	Too short distance between tenement and rear building	1
18	Rooms having windows which do not open directly to street, yard, or courts of specified areas	2
25	Vent shaft of insufficient area	1
31	Bathrooms and toilets have no direct ventilation	4
33	Four-story wooden tenements with apartments on lower floor	1
37	Stairway to roof not properly fireproofed	1
38	No additional stairs in three-story frame tenements	3
109	No fire-escapes on three-story frame tenements	4

Two new tenements, erected in July and November of 1915, were built up to the rear lot line, leaving no yard space. In one three-story frame building, containing 18 apartments, there was only one stairway, and no fire-escapes, and there was no rear yard—only small triangular lot line courts. Another tenement of seven apartments, built in 1913, had no rear yard open to sky, and a stable was located 33 feet from tenement. A three-story frame tenement, being remodeled and enlarged, had no outside ventilation for three bathrooms and toilets. A four-story frame tenement of 50 apartments, was being erected with two apartments on ground floor, and with four bathrooms and toilets without direct ventilation to the outer air. These, and other instances of violation of the law noted in the above list, show clearly that Stockton should lose no time in providing the machinery with which to enforce the state law, not only in old houses existing prior to the passage of the act, but also in the new buildings which are rapidly increasing in number.

At present, the city clerk grants the building permit, and as no plans are filed it is an easy matter for unscrupulous builders to evade the law. Few builders know the requirements even if they wish to comply;

others become confused over the technicalities of the law, and blunder through as best they can; while, unfortunately, still others know the law but endeavor to evade it in every possible manner, regardless of the social cost to the community, or the ultimate cost to themselves. As the city has not even a local building ordinance to regulate the erection of all types of buildings, there is absolutely no kind of check on tenement houses. Without a building ordinance or building inspectors, without inspectors in the health department to enforce those sections of the law applying to maintenance, and with many new tenements in the course of construction, and several others planned, the city of Stockton stands in a fair way of developing a very real tenement house problem.

Three story, frame tenement house, containing eight family apartments and 28 additional rooms rented to lodgers, Stockton. No fire escape; building covers entire lot—only yard space occupied by porches and stairs here shown.

The report of the grand jury to the city council in July, 1915, pointed out the urgent necessity of a building ordinance and a building inspector, stating that the fire danger was especially great. The Commissioner of Public Health and Safety, in reply to the report, agreed and stated: "There is not a building in town, including cottages (with the exception of Class A structures) that does not need inspection. State laws are violated. There are no fire-escapes on lodging houses."

If the city of Stockton is to become the large city predicted by enthusiastic residents, it certainly must supervise the erection of tenements, hotels, and all buildings. Otherwise, regular metropolitan slums will spring up, the fire menace will increase, and the unsightly, unhealthy, and even dangerous buildings will cause the residents to regret the growth of the city.

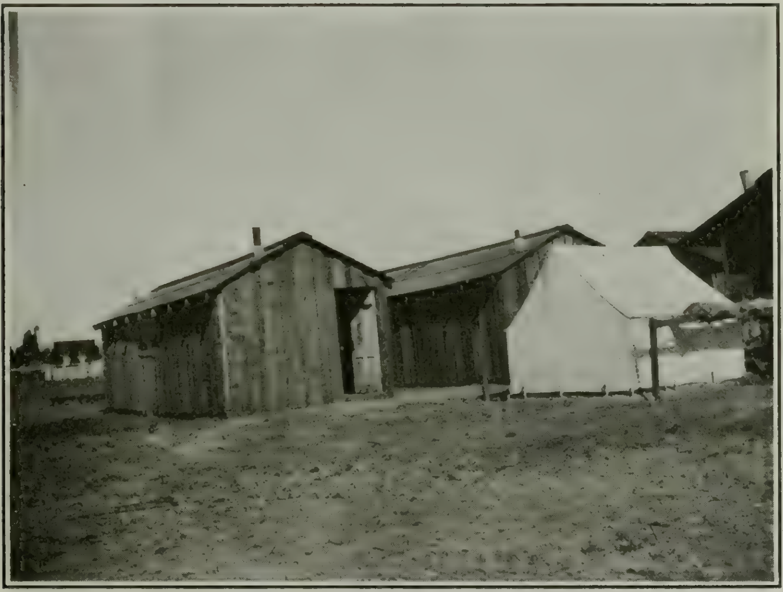
A wooden garbage chute (marked "X") in a tenement house, Stockton. This chute was rotting away, and an old torn sack was attached to the end.

(b) Dwellings Other Than Tenements.

An investigation made in July, 1915, in Stockton, revealed deplorable conditions already existing in single family dwellings and the multiple dwellings not covered by the Tenement House law. Due, perhaps, to the scattered location of the various factories and industries, these bad conditions exist not in any particular section, but in spots throughout the entire city, usually in the immediate neighborhood of these industries.

Groups of dilapidated, time-worn shacks were found everywhere, in the outlying districts as well as in the older portion of the city. Rentals everywhere are high in comparison with accommodations afforded. Due to the migration of entire families to the harvest fields and fruit districts in the summer months, many of the houses vacant in July were found occupied during a general or casual reinspection in November.

A group of fifteen one-room shacks, built out of old boats, were found behind a high board fence at South Van Buren and Scott streets. Only one toilet and one yard hydrant were provided for the fifteen shacks. The toilet was leaking and in filthy condition. In November it was noticed that more shacks had been built, thus still further overcrowding the lot area. Windows were small and of varying size, but averaging about 2 feet by 18 inches. There were usually two windows in each shack, but many of them did not open. The shacks were rough-finished inside and exceedingly dirty and vile smelling. As most of the shacks were only between six and seven feet in height, the high board fence obstructed them from general view. A rental of



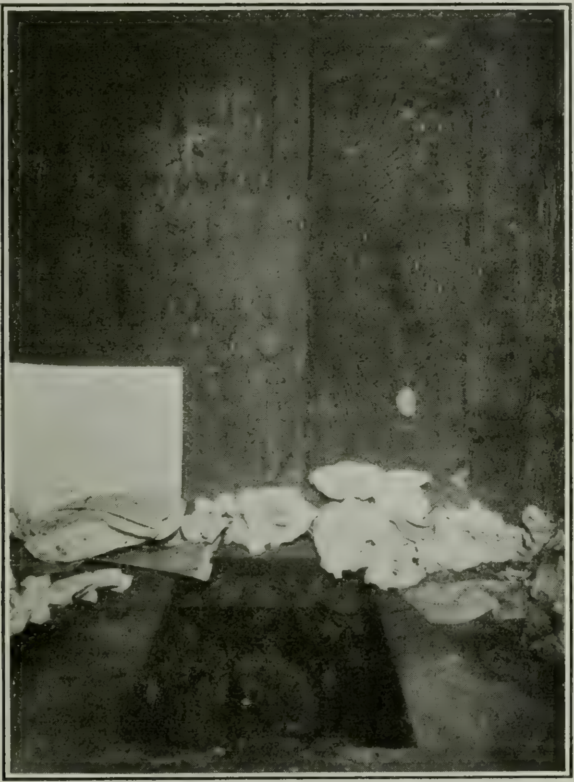
Shacks in outskirts of Stockton. No plumbing; one vault toilet for ten shacks; several rooms in two room shacks do not open to outer air. No building regulations.

$3.00 was charged for the white shacks, while those painted yellow brought $4.00 per month.

A block or so distant, near the Santa Fe railroad, another group of shacks was located. These were occupied mostly by Mexicans and were built out of wood, sacks and tin cans. The three one-room huts and two barn-like structures used for bunk houses and dining room, found in July, had been added to in November. Three new one-room shacks and two two-room shacks, all without means for light or ventilation, were found occupied in November. One of the small huts was found occupied during the summer by an Italian in the last stages of tuberculosis. A few months later, the same hut, in the same filthy condition, was found occupied by a young Swedish sailor. One old vault was the only toilet convenience, and a faucet at a tank some 1,500 feet distant, was the only source of water supply. A high board fence was being built around these shacks in November, hiding them partly from view of passing trains—another instance where a high board fence hides, but does not solve, a city's housing problem.

Yard in rear of tenement house, Stockton. Insanitary, unsightly and a fire menace.

With one exception the shacks in this group were found to be occupied by Mexicans in November. These Mexicans go to Alaska every year to work in the canneries, and then return to these shacks for about six months. They pay twenty-five dollars apiece for sleeping space in these dark, cold, and airless rooms, and furthermore purchase their clothing supplies each spring from the second-hand clothing dealer who collects the rental for the shacks, and always arranges for reimbursement from the annual advance money credited to each man before sailing for Alaska. Since Stockton is really an inaccessible place with reference to the Alaska canneries trade and shipping points, the conclusion would seem inevitable that these shacks have been erected in that city, and the cannery workers are induced to live there, because Stockton has no building restrictions, and makes no effort with regard to housing inspections.



An open privy vault in the rear of a dwelling—a not uncommon condition in the smaller cities and towns.

A small group of houses in another portion of the city, rented by a large manufacturing company to its employees, were found in bad repair, with no patent toilets, with leaking roofs, and torn paper.

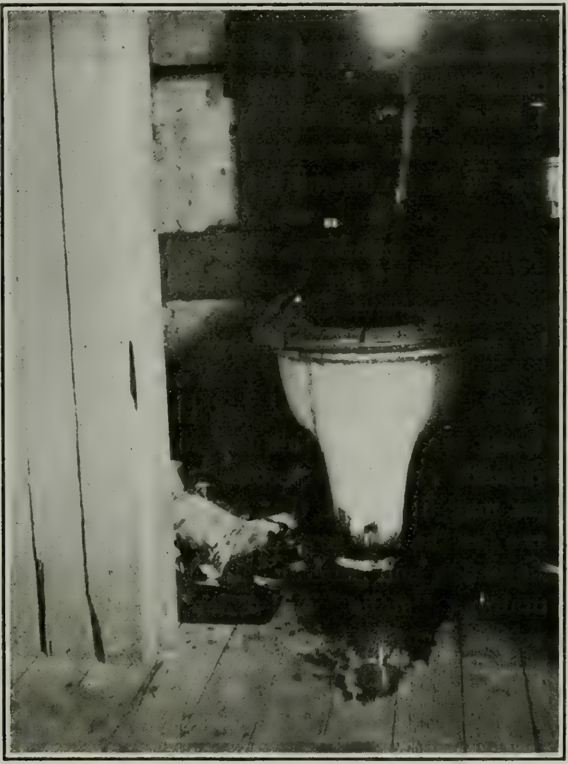
This general bad repair, dilapidation, and lack of sanitary conveniences, however, was found in all sections of the city. The problem is by no means limited to these groups of shacks or shanties. The inspection covered 76 family dwellings, other than tenements, and the following is a summary of the worst conditions discovered:

(*a*) Number of habitations in bad state of repair	65
(Walls and floors broken—general dilapidation.)	
(*b*) Number of habitations with broken or insanitary plumbing	60
(*c*) Number of privy vaults	8
(*d*) Number of yards in filthy condition	33
(*e*) Number of habitations without garbage cans	61
(*f*) Number of habitations with toilet used by 1 family	38
Number of habitations with toilet used by 2 families	10
Number of habitations with toilet used by 3 families	5
Number of habitations with toilet used by 12 families	1
Number of habitations with toilet used by 15 families	1
(*g*) Number of dark inside rooms	14
(*h*) Number of habitations found in unclean or filthy condition	60
(*i*) Number of families occupying habitations of 1 room	20
Number of families occupying habitations of 2 rooms	5
Number of families occupying habitations of 3 rooms	9
Number of families occupying habitations of 4 rooms	12
Number of families occupying habitations of 5 rooms	17
Number of families occupying habitations of 6 rooms	10
Number of families occupying habitations of 7 rooms	1
Number of families occupying habitations of 9 rooms	1
Number of families occupying habitations of 10 rooms	1
One house containing 20 rooms was occupied by owner who sublet single rooms to lodgers.	
(*j*) Number of habitations occupied by Greek families	1
Number of habitations occupied by German families	2
Number of habitations occupied by Negro families	3
Number of habitations occupied by Mexican families	19
Number of habitations occupied by Italian families	18
Number of habitations occupied by American families	7
Number of habitations occupied by Spanish families	7
Number of habitations occupied by Russian Jew families	1
Number of habitations occupied by Portuguese families	2
Number of habitations occupied by Irish families	1
In 15 shacks nationality was not obtainable; most of the men occupying these were Mexican sheepshearers.	
(*k*) Average rental per room	$2.36

(*l*) Instances of congestion:

	Size of room	Total air space (cubic feet)	Number of occupants	Air space which would be required by law if in a tenement house (cubic feet)
West Market street	8′ x 8′ x 9′ 6″	608	2	800
West Main street	12′ 6″ x 12′ 6″ x 7′ 8″	1,196	4	1,600
West Scott street	9′ 6″ x 13′ x 10′ 2″	1,261	4	1,600
West Washington street	7′ 10″ x 10′ 8″ x 10′	832	4	1,600
Ophir street	14′ x 10′ 3″ x 9′	1,291	5	2,000
Ophir street	14′ 6″ x 9′ 9″ x 10′	1,414	6	2,400
East Scott street	7′ x 9′ x 9′ 3″	583	11	4,400
East Scott street	9′ x 11′ 3″ x 9′ 10″	981	7	2,800
West Market street	11′ x 10′ x 9′	990	5	2,000

Besides these bad conditions found within the houses, other unsightly and insanitary conditions were found through various parts of the city. Vacant lots are usually the dumping grounds for rubbish and garbage. As no garbage cans are required, and as the city has no facilities for garbage collecting, vacant lots and the banks of the sloughs have naturally become the refuse heaps of the city. Old broken carts, junk and old iron litter up many vacant areas. Filthy stables and fly-breeding barnyards in the center of the business section, as well as in the residence districts, add to the general disorder and insanitation.



Broken and filthy toilet in tenement house, Stockton. Water leaking through floor.

The health department has no sanitary inspectors and the city ordinances contain practically no sanitary regulations. Consequently, it is not strange that such conditions as are described above are to be found in the course of a most cursory survey. Without inspectors and ordinances, little can be done to prevent the existing insanitary conditions growing worse with the growth of the city.

Of still greater importance, however, is the necessity of providing against new and greater problems. Building ordinances should be passed and building inspectors appointed to prevent the erection of more poorly constructed houses. The grand jury report in July, 1915, referred to in the report on tenements above, pointed out the need of a building department and of building ordinances covering all dwellings. The city should lose no time in acting upon this important recommendation.

(c) Hotels and Lodging Houses.

Many complaints had been received by the Commission from various sources concerning the conditions in the cheap hotels and lodging houses in Stockton, so thirty-eight of these places were inspected in July, 1915, although the housing work had been confined generally to tenements and other family dwellings. On the following page the reports of these inspections are summarized in a table which emphasizes some of the worst conditions found. Although the State Hotel and Lodging House Act is not very specific or stringent, yet it does cover some of these bad conditions, and general health laws could be invoked to remedy some of the worst abuses. For instance, section 401*a* of the Penal Code provides that every room rented for sleeping purposes within the limits of any incorporated city, must contain at least 500 cubic feet of air space for each occupant, and violation of the section is made a misdemeanor, yet there is no effort made to prosecute the many violators of this law in Stockton. The fact that the Board of Health has no inspectors to check up conditions and enforce the laws may exonerate that department from blame, but it affords no excuse for the city government.

The worst congestion and general housing conditions were found in the places containing "stalls" and "flop" rooms. These "stalls," with partitions from eight to ten feet high, are usually dirty, and all of them are dark and poorly ventilated. The "flop" rooms are so crowded with dirty beds and mattresses that it is impossible to keep the floors clean. A lodging in such places only costs from 10 cents to 20 cents a night, so grandeur can not be expected—but cleanliness and ventilation can be expected, and the law demands both.

The slightly more expensive or moderate priced hotels have better ventilation as a rule, and are cleaner and more sanitary. But there *was not a fire-escape on any of the thirty-eight hotels and lodging houses inspected!* This matter certainly demands attention. Not only are the lives of hundreds of occupants of these places in constant jeopardy from fire, but the lives of all the inhabitants of the thickly populated neighborhoods are endangered.

In view of the fact that its immigrant wards frequent these places, and particularly because immigrant girls are often employed in them, the Commission feels bound to also call attention to the fact that many of the lodging and rooming houses inspected are little more than houses of prostitution and assignation. Several of these places are located over saloons which are connected by stairways, and women openly solicit in booths in the saloons and take men to the rooms upstairs. In one house the inspector observed that every man accompanied by a woman was asked whether the room was desired for "only a little while or for the night." In another place, women were observed in the hallway several evenings openly soliciting passers-by on the street. Not only the police, but private organizations and citizens interested in the enforcement of the new abatement law, should take steps to prohibit the continuation of such practices.

III. LOS ANGELES.

Housing and General Social Survey of Macy Street School District, Including Chinatown.

(a) Introduction.

The following report on the conditions existing in what is known as the Macy School district of Los Angeles is based on investigations made there during December, 1914, January, February and part of March, 1915. It considers all the factors of importance which affect the living conditions of any community, the location, housing, the environment and industrial opportunities. In the description of the Macy Street School an attempt has been made to show how constructive the work of a neighborhood school can be, even in the midst of most unfavorable surroundings.

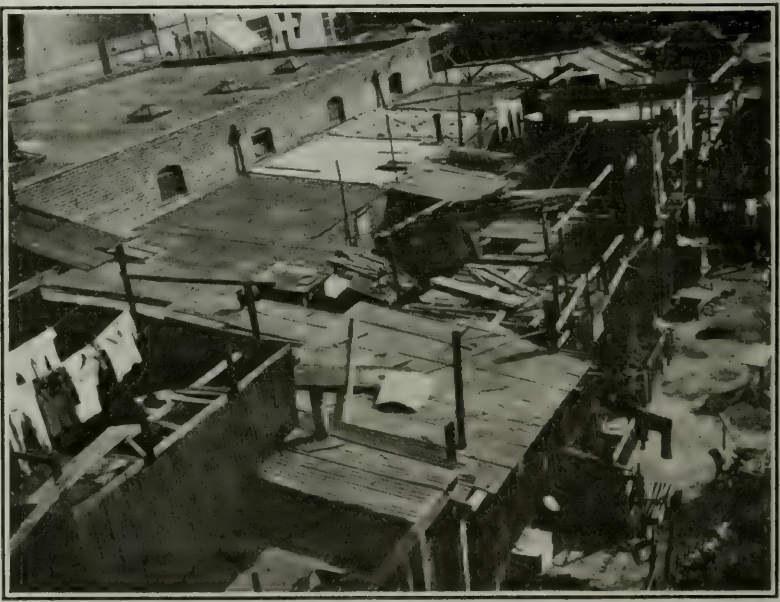
Special courtesy has been shown by the Municipal Housing Commission of Los Angeles in giving information and assistance; by the Board of Health in the use of their records; by the Niagara Insurance Company of San Francisco who so kindly permitted the use of their maps, and by the students of the University of Southern California who helped with the investigation.

History of district.

The Macy School district, formerly known as the eighth ward, is located in an industrial center of Los Angeles, and is part of the oldest section of that city. Dwellings, stores and industries are now located where in the early Spanish settler days were orchards and vineyards. A house once occupied by the first governor of California is still standing here. The City Plaza, years ago a meeting place for the townsmen, with its well kept lawn and shade trees, is now a resting and meeting place for the unemployed.

At one end of the district lies Chinatown, once a flourishing business center for the ten thousand or more Chinese residents, where opium and gambling dens and lotteries thrived unmolested. For twenty years the old "eighth ward" had all the brothels and one-third the saloons of the city. In the midst of Chinatown, the crib district still stands partly demolished, roofs gone, doors and windows broken and boarded up. About half of the remaining one hundred and forty apartments are occupied by Chinese men and occasionally by Mexicans during the winter months.

The Macy district with its saloons, its gambling houses and prize-fights, its red-light section, and its ward politics, gave but little opportunity for a wholesome and peaceful neighborhood. Its young people filled the juvenile courts and reformatories; the older ones, the jails and state prisons. Up to three years ago, it seemed hardly safe to walk through the streets at night on account of the drunken gangs and other disorderly groups of men.



Rear view of buildings in Macy street, Chinatown district, Los Angeles. Shows crowded condition of lots; insanitary shacks—unsightly and a fire menace.

Gradually the movements toward civic betterment have had their effect here. The State outlawed the prize-fight; the red-light district was abolished; a city charter amendment eliminated the old ward lines and consequently all ward politics. But the constructive factor in changing this neighborhood from a disreputable and lawless one to a peaceable, orderly community has been the influence of the Macy School, which with its highly socialized and human activities has wrought the most remarkable changes in the community and the life of the people.

Location and external environment.

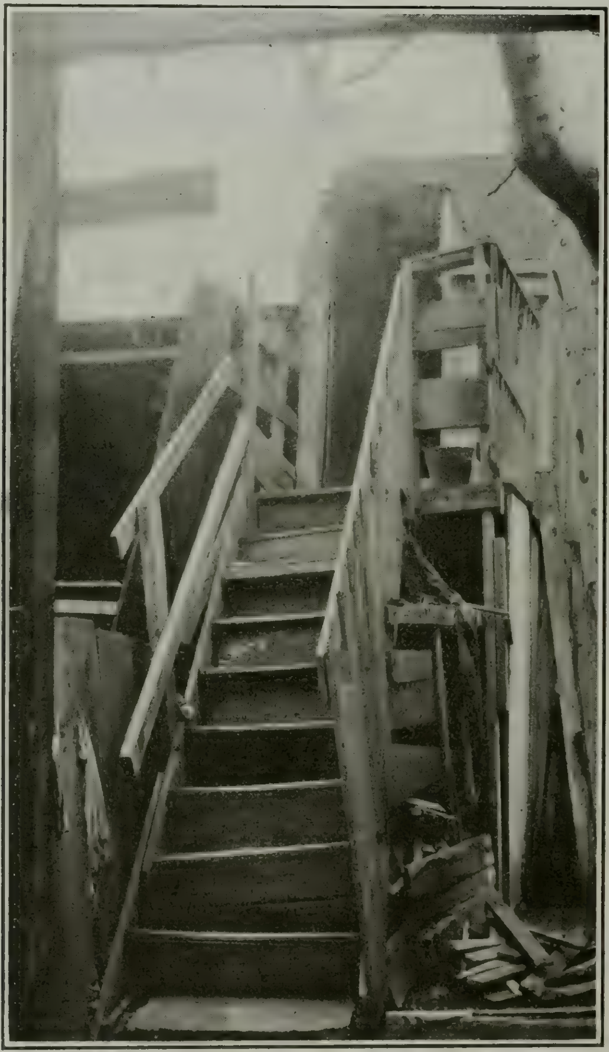
The Macy School district, located on a low, flat area of land adjoining the Los Angeles River, lies at the very entrance to the business center of the city. Although it includes a large territory, only a small part is devoted to homes. Chinatown takes up a section of about twelve blocks, and railroads cut it at either end. On the outer edge of Chinatown and near the Macy School standing on a siding are a number of cars into which manure is dumped every day, collected from stables throughout the city. Much of the manure which falls to the ground is left rotting in the sun, breeding countless flies.

Unpaved and muddy street in Macy street district, Los Angeles.

The adjacent packinghouses, with their corrals for sheep and hogs, and the smell and smoke from the gas plant, combine to make the place an unfortunate residence district.

(b) Housing.

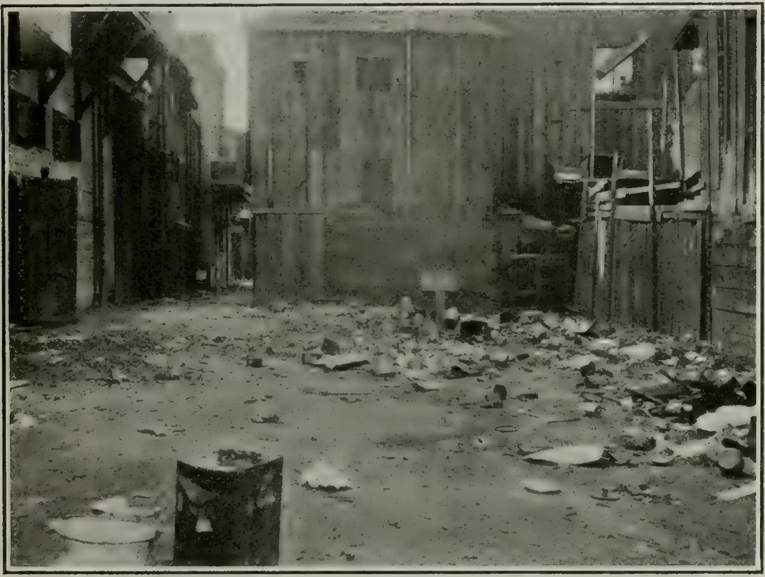
There are two distinct housing problems, the tenements and lodging houses in Chinatown and the single dwellings and house-courts in the remainder of the district. Families are, for the most part, housed separately in frame buildings. The tenements here are principally old two-story residences occupied by several family groups. The land is evidently being held for future speculation as industrial property, and in the mean time landlords are making no improvements or repairs but desire to collect rentals for payment of taxes. As a result the families, with the exception of those owning their own homes, live in old tumble-down, dilapidated, insanitary buildings; consequently native American families have moved away and foreigners crowded in. In fact, at the time of the investigation, one house just outside the district collapsed.



Only entrance to a tenement house in Los Angeles.

The two families occupying the place were hurrying a little one evening to go to a "movie," and the foundation, not able to endure the extra commotion, fell down. Within the Macy district there are a great many other houses in equally bad condition.

With the exception of a few house-courts, the lots are not overcrowded with buildings, though they are considerably cluttered up with rear shacks, stables and outbuildings. In spite of the regulations of the City Housing Commission, there are rear apartments in house-courts, which present some of the worst housing evils. The central court serves as the front yard and laundry and is the only play place for the children. Here are the water faucets and toilets for the entire court, making privacy impossible.

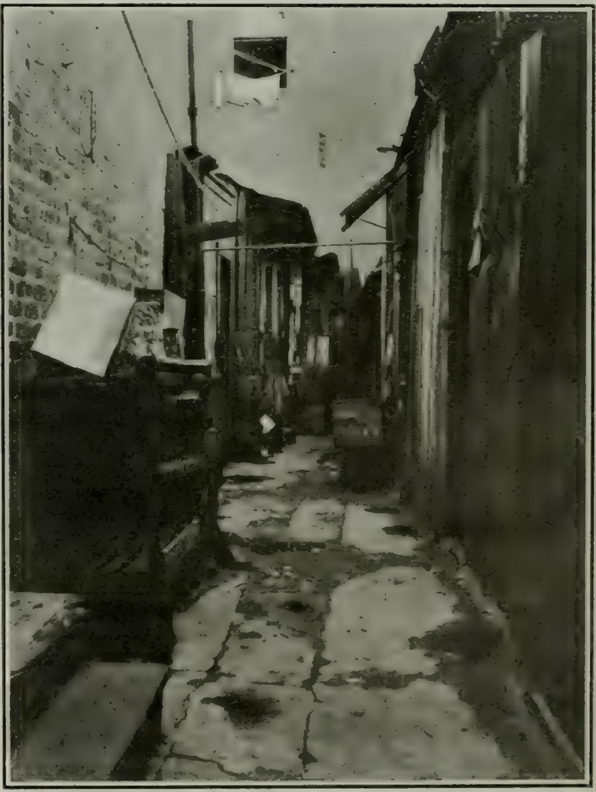


Garbage and rubbish on vacant lot in Macy street, Chinatown district, Los Angeles. A not uncommon condition, which could be easily remedied.

Repair.

The condition of repair shows absolute neglect on the part of landlords in keeping up the buildings to a condition fit for occupancy. Out of 241 families paying rent, 108 were living in apartments in bad state of repair. Defective plumbing was found in 53 out of 334 houses. Broken windows have to be boarded up by tenants to keep out rain, wind, flies and dust and consequently all light and air. Rain pours in where shingles are missing, flies from the nearby stables and other nuisances swarm into the houses through the broken screen doors and windows. Bedbugs, cockroaches and rats are another cause of complaint from tenants. Again and again tenants have stated that the owners have refused to repair, or keep promising to remedy the defects, but fail to do so. Many tenants are too ignorant to know what is due them and make no requests for repairs, more often the tenant is in arrears with the rent due to lack of employment and fears being put out if any repairs are asked for.

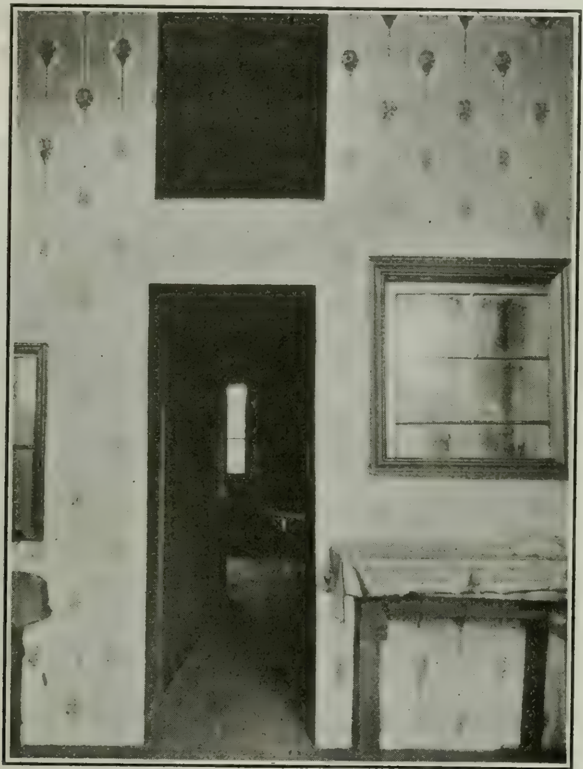
In one instance, a widow, trying to support her four children was found living in two rear rooms of an old tumble-down house; she became ill and the family came to the attention of the neighborhood school. The family was living in filth and squalor, the house overrun with vermin. Under the direction of the domestic science teacher of the school, the boys and girls of the higher grades were given a lesson in house cleaning and service and helpfulness to a neighbor. But even after the walls were whitewashed, the floors and windows scrubbed, the yard cleaned and the vermin-infested furniture replaced by other pieces, the rooms still looked far from fit for living purposes, because the house itself was so old and dilapidated.



A dark and poorly drained passageway between dilapidated shacks in a sort of house court, Los Angeles.

Sanitation.

Sanitary conveniences are sadly lacking in these old houses, many having no inside water connections. Outside, though hoppers are provided for the hydrants, water is not always thrown into them and waste water was often found stagnating in pools in the yard. A covering of boards hid from sight one open cesspool, a deep hole dug in the ground under a faucet and filled with stagnant water and filth. For the sake of the health of the city, all apartments should be supplied with sewer-connected sinks and running water.

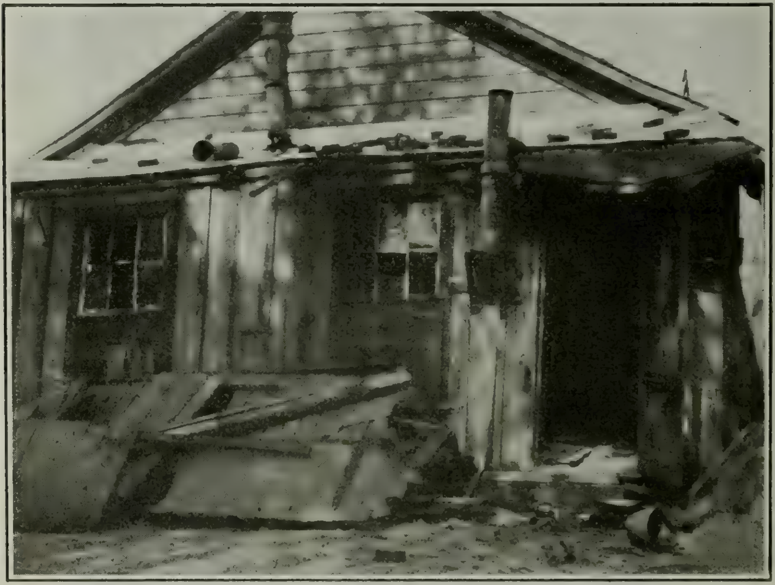


Flashlight view of interior of a family dwelling in Chinatown, Los Angeles. Dark, inside rooms in the loft (shown in dark upper opening) used for living and sleeping purposes.

Bathtubs, where found, were often in such bad condition, or were not connected with water, so that they could not be used. Common use of toilets is prevalent here; 159 apartments out of 334 investigated were using toilets in common. This is due in large part to the local house-court ordinance which permits one toilet for every ten men and one for every ten women in the house-court; a regulation which does not work as satisfactorily where families are concerned. Located out of doors, the common use of these toilets and their consequent filthy condition present great moral dangers from the lack of privacy. In one court a toilet on the rear porch of the front house for the use of the two families residing there was also used by the women and children of the fourteen apartments in the rear (sometimes from 20 to 30 persons).

Garbage.

The insanitation of the district is further augmented by the unsatisfactory garbage disposal; 197 families had tin or metal cans, many of them without covers, but 118 families threw their garbage to chickens and rabbits or into open pits where it remained for days breeding flies and giving out noxious odors. Occasionally it was thrown into a neighboring vacant lot or dumped into the river.



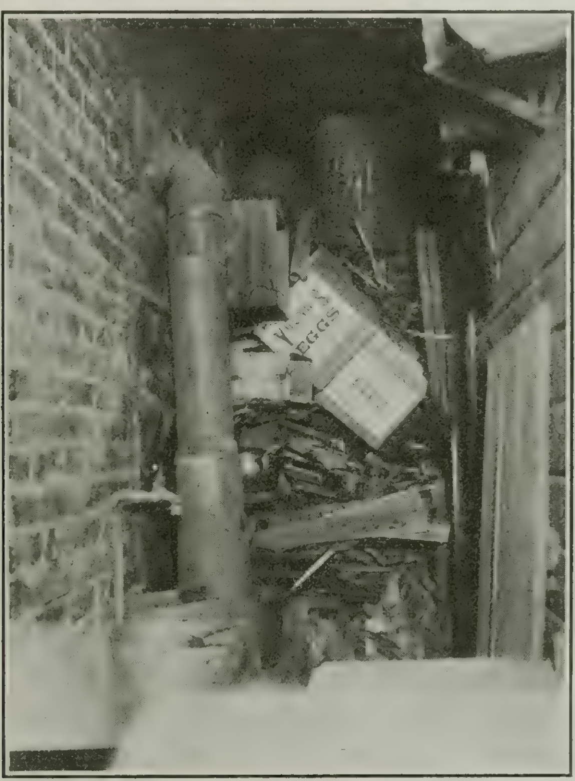
The single dwelling problem in a large city—Los Angeles. Foundations giving way and house generally dilapidated.

Stables.

The numerous stables in the district add to the general insanitation. These stables are as a rule kept in filthy condition and their close proximity to the houses makes their presence a nuisance to residents. Windows of rear apartments of a house-court open directly on a filthy, foul-smelling barn lot where horses, cows and goats were kept. Another house-court adjoined a lot on which was a stable accommodating 26 horses. Several other instances were found where stables adjoined houses or were within two or three feet of bedroom or kitchen windows.

Residents complained constantly but the district being within the industrial limits, the ordinance regulating the distance of stables from houses does not apply.

Added to the unimproved streets and vile odors from the industries, the stables, 91 in the residental part, 158 in the entire district, are yet another nuisance, the nauseating odors, flies and filth of which residents are compelled to endure because of their poverty and their inability to move into a better location. Although in an industrial district, these stables with manure heaped in a corner, with dirt or wooden floors are a disgrace to the city.

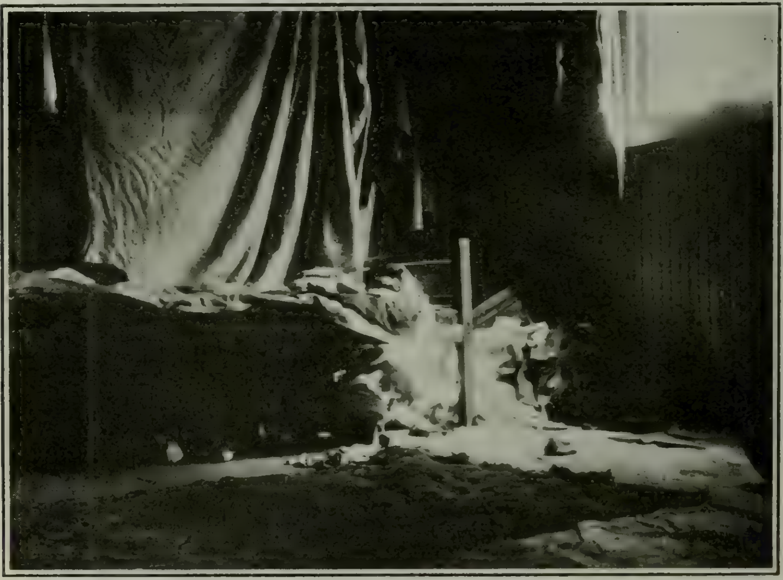


A kitchen built in between two buildings used as human habitations in Chinatown, Los Angeles. Note inflammable rubbish near stove.

Cleanliness.

As to cleanliness, much is to be desired, both outside and in. Half of the yards were in filthy condition, from the pools of stagnant water, into which rubbish and garbage have been thrown for lack of the proper receptacles.

The dirt inside the apartments is due in part to the ignorance of the foreigner and the absence of all sanitary convenience. Grinding poverty, which makes the inhabitants struggle for the poor food they get, does not leave much money for soap and brooms and clean rags. Moreover, crowded rooms without closets or storage room for food offer little incentive for tidiness and cleanliness. Dirt has a tendency to collect in dark or unventilated rooms and the inside rooms, or what was more frequent, rooms with windows too close to neighboring houses to admit much light or air, were the most neglected. A little teaching and a great deal of patience is what is needed—but teaching for the landlord as well as tenant.



Time exposure in a two room, family dwelling, Macy street district, Los Angeles. The single cot here shown was the only bed provided for nine persons.

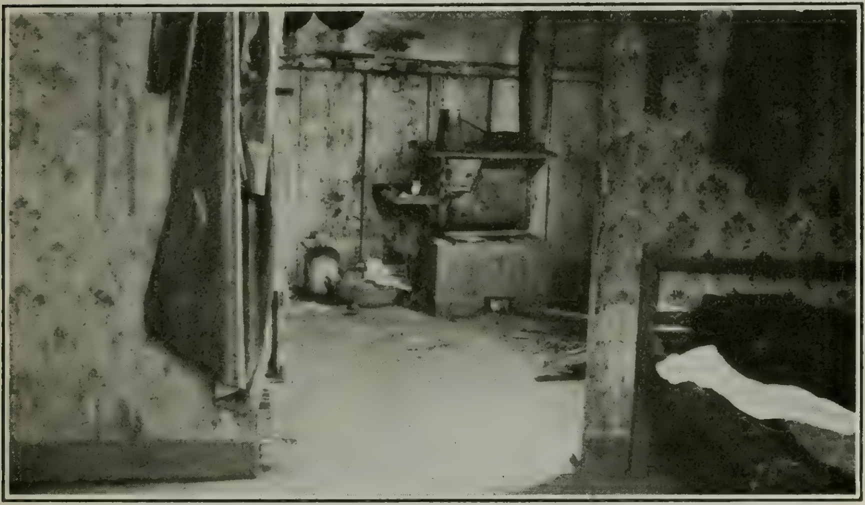
Occupancy and congestion.

Congestion in these houses is a serious problem; the 500 cubic feet air rule is constantly violated, and 156 cases of bad overcrowding were found in bedrooms. The table in the appendix shows the worst of these and the extent of violation of cubic air space. Crowding in beds is also frequent and has even a worse effect on the individual than sleeping in an overcrowded room (see Appendix). Four, five, even seven persons were found sleeping in one bed. In 14 bedrooms there were no beds and the 40 persons occupying them had to sleep on the floor. Many others sleep on the floor, but families dislike having it known and say they all occupy the one bed.

This overcrowding will persist, however, so long as families have such low incomes that they are compelled to keep lodgers to contribute towards the rent or to help out their fellow countrymen, in spite of the fact that it undoubtedly lowers the type of family life and should be discouraged.

Rent.

For these shabby apartments the average rental was $9.30 per month, while the average income was $36.85. This leaves only $27.55 for food, clothes and other expenditures. In fact, the average income for a family of five was less than $450.00 a year, over one-fourth of which was spent for rent.



Flashlight picture of a totally dark kitchen in a house court dwelling in Los Angeles.

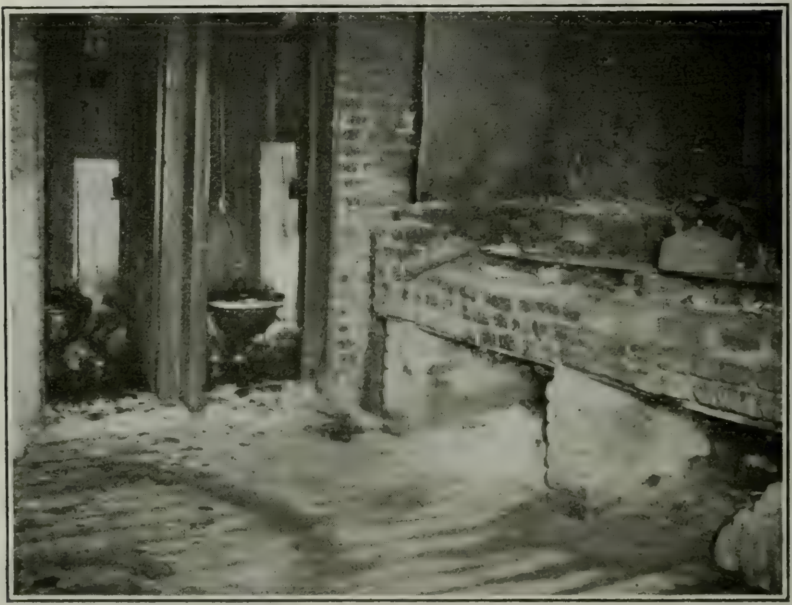
(c) Employment.

These low incomes are due chiefly to the large number of men unemployed during several months of the year, to intermittent work, and to the low wage paid when men are employed. At the time of the investigation, over half of the men were without employment and others had only intermittent work. Of the 146 families whose income was ascertained, 91, or 62 per cent, were receiving less than $60 per month. Almost every grade of skilled and unskilled trades was represented, and yet only two men were found who belonged to unions. This employment problem is the fundamental one of the district and must be solved if the people are to be helped.

Contrary to expectation, few of the residents work in the district. They have to live in this insanitary industrial part of the city because of their destitution. Here are the low rents, although not the cheapest.

The average rental of $2.86 per room is really high, considering the accommodations afforded. Bad housing and a bad industrial condition, low wages and unemployment seem to go hand in hand.

Again, because of this economic situation, both women and children are compelled to add to the monthly budget by outside work. The women are laundry workers, garment makers, day workers (usually washing), and many keep boarders. The laundry workers get the highest wages; occasionally as much as $9.00 a week. Those who keep boarders make little more than their own expenses. From $1.00 to $1.50 a day was the usual rate for day work. Complete statistics are to be found in the Appendix.



Flashlight picture of two filthy toilets, with no separate ventilation, opening into the kitchen of a Chinese lodging house in Los Angeles.

With the irregular and insufficient incomes, it is obvious that the poverty would be extreme. Consequently, there are few savings, except where the men occasionally belong to lodges or societies from which their families derive slight benefit in case of sickness or death.

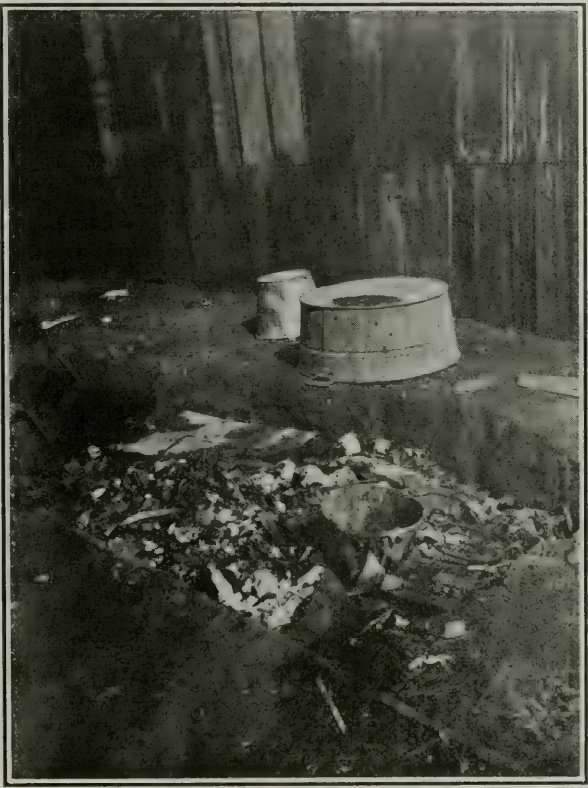
This poverty is relieved in part by the efforts of the Macy Street School and the Municipal Charities.

(d) Macy Street School.

Too much cannot be said of the part which the Macy Street School has played in meeting all the problems of the district. A public school belongs to the people and therefore they come to it more freely than they would to a settlement or a church.

At last we are learning of what education consists. The school that is most thoroughly achieving its purpose is the one that is making of each resident of the community the finest type of citizen he is capable of becoming.

Such citizenship can not be taught in a few hours each morning to the children of school age and then spread to that larger group of those over school age. The whole community must be educated, with a learning that shows them how to live and work and play.



Open garbage pit, breeding and feeding thousands of flies, in house court yard in Macy street district, Los Angeles.

Just this is the field which the Macy Street School occupies. It is open day and night. It is trying to make an American community with American ideals and standards, out of twenty-five different nationalities. This means studying the idiosyncrasies of each one—the Italian with his love of industry and frugality, whose adaptability makes him quickly assimilated, and the Mexican, with his lack of initiative, whose roving temper increases the difficulty of adjusting him.

They all present the common difficulty of inability to speak English, because, for the most part, they have been in the United States less than six years.

The day, as well as the evening school, attempts to meet the industrial needs of the district. At 13 or 14 each child is started on some definite trade which can become later on a means of earning a livelihood. If the particular trade desired by the child cannot be taught by the school, an effort is made to place him in some shop as an apprentice for half a day, while he attends school the other half.

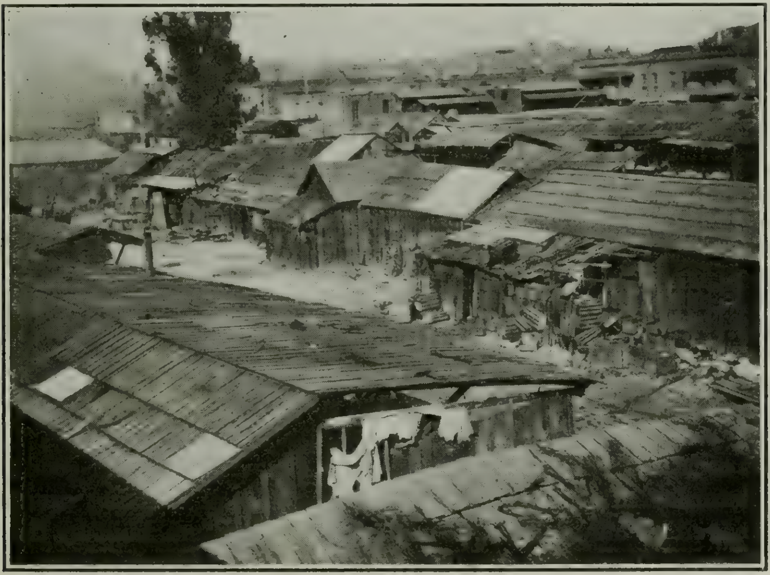
Cars, filled with manure, standing (for days at a time) in the center of the Macy street district, Los Angeles. A breeding place for countless millions of disease-carrying flies.

Basket making, metal work, woodwork, cookery, sewing and millinery are the trades taught. The cooking class prepares lunch for the teachers. Here the girls learn to serve lunches, as well as prepare them. In the woodwork department the boys are making furniture to be used in the new school.

Folk-dancing, singing and story telling are diversions from the routine book work and make this part of the school curriculum less tedious. Children are held, not by the old method of compulsory education, but by the spirit of interest which prevades the entire school. In spite of the seeming disorder and noise, every child is busy at his own job and so interested in it that when vacation comes it is with regret that he sees the school close. At the completion of his school work regular employment is found for the child. Incidentally, this familiarity with the industrial world often makes it possible for the teachers to find work for the adults.

The school further recognizes the importance of the hitherto neglected immigrant mothers. A class in English and sewing is held for them in the afternoon.

The evening school means opportunity for the adult. There he can learn to speak English and acquire a definite trade, fitting himself to take his part in our industrial world. Most interesting and necessary of all, he can learn citizenship. The diploma from the naturalization class is accepted by the court in place of the regular examination. There has been so little understanding of our politics before that some Italians were overheard saying, "We are Socialists in the head but we registered Republicans in order to get jobs. Democrats don't get jobs."



General view of dilapidated corrals and shacks in Chinatown, Los Angeles. (See page 262 of the text.)

Day and night, the school supplies all the recreation the district affords; and its influence has already been felt in the reduction of crime and juvenile delinquency.

The accompanying table on juvenile delinquency (page 242) shows that few arrests have been made on charges which incriminate the child. It is interesting to note that there are no cases of school truancy.

The old Coyote Gang of boys, once the terror of the district, can now be seen enjoying the games, reading, music or candy making in the evening school. Although the leader of the gambling house they were accustomed to frequent came to the school to induce them to return, his efforts were in vain.

Petitions Filed Against Children of School Age and Under, in Macy Street School District, September, 1913-March, 1915.

Date petition filed	Age	Sex	Nationality	Charge	Disposition
Nov. 4, 1913	10	Boy	Mexican	Petit larceny	Probation
Mar. 23, 1915				Burglary	Commitment suspended; St. Francis Orphanage
Dec. 16, 1913	13	Boy	Jewish	Petit larceny	Juvenile Hall—6 weeks
Jan. 6, 1914	7	Boy	Mexican	Danger of leading immoral life.	Institution; later returned to home
Jan. 30, 1914	4	Boy	Mexican	Mother deserted—unfit home.	Placed with aunt
Jan. 30, 1914	7	Girl	Mexican	Unfit home	Returned to home
Jan. 30, 1914	12	Girl	Mexican	Unfit home	Returned to home
Apr. 12, 1914	7	Girl	Mexican	Destitute	County pay for care
Apr. 12, 1914	5	Boy	Mexican	Destitute	County pay for care
Apr. 12, 1914	6	Girl	Mexican	Destitute	County pay for care
May 21, 1914	14	Boy	Mexican	Burglary	Allowed to go home
Mar. 23, 1915	14	Boy	Mexican	Burglary	Allowed to go home
May 21, 1914				Burglary	Probation
July 25, 1915	4	Boy	Mexican	Unfit home	To go with mother
July 25, 1915	2	Boy	Mexican	Unfit home	To go with mother
July 25, 1915	10	Girl	Mexican	Unfit home	To go with mother

The disposition of cases where the home of the defendant is unfit, offers material for thought.

On occasions, the children are taken to a movie, or to hear good music on Saturday afternoon. Every possible form of relaxing exercise is offered, either out-of-doors, or in the tiny gymnasium, built by the boys themselves. Once a week a dance is held, which is solving one of the biggest problems of the neighborhood. These pleasure-loving races, especially the Mexicans and Italians—find physical relaxation is vitally necessary after a tedious day's work; and the dance seems to furnish this better than any other form of amusement. It combats the evil influence at work in the neighborhood and holds the people as nothing else can. Considering the bare, unattractive homes, cold and dark, from which they come, it is evident that if the boys and girls were not offered the cheerful schoolhouse, they would seek refuge from their monotonous lives in some less desirable place.

Beside the education and stimulation which the school gives the neighborhood, it is often called upon to relieve their actual physical needs. The children who come to school insufficiently clad are given warm clothing and even the adults are supplied. Furniture is also often given, especially beds and stoves. Many of these families have had to improvise a stove out of a galvanized iron wash tub turned up over a pile of bricks.

As so many of the children were suffering from malnutrition, a penny lunch is supplied at noon where the children can get all the soup and bread they can eat for a cent, and if they cannot pay the cent they are fed just the same. Mothers who cannot afford food for themselves, or those who are ill, have their lunch brought them by the children.

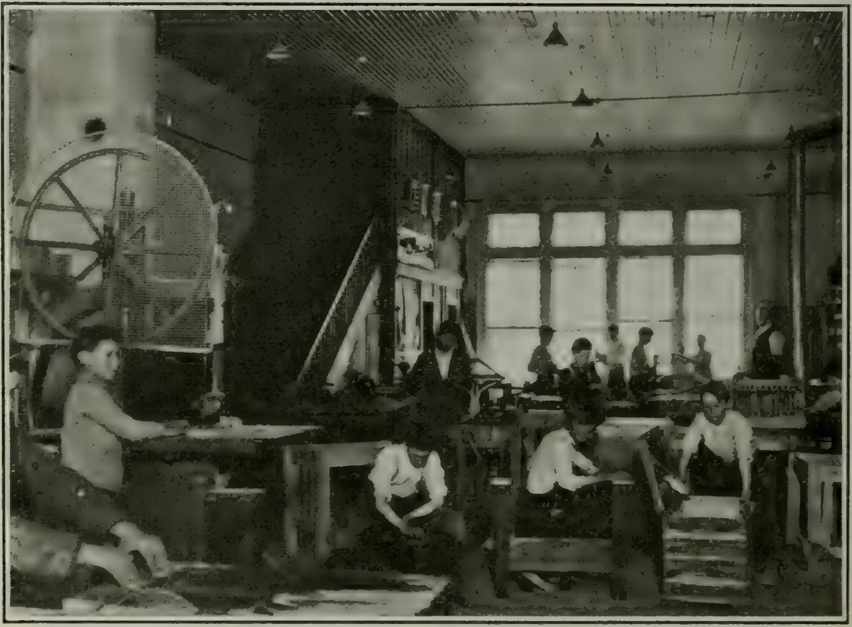
Celery of vegetable peddlers soaking in open drinking trough for horses in Chinatown corral, Los Angeles. Note general unclean and insanitary conditions.

Those who are ill and cannot afford medical treatment are sent to the free clinic.

Beside this relief work the school assumes its responsibility for the physical care of the pupils, by seeing that those who need it use the shower baths. Wholesome exercise, that will keep the children in good condition, is also encouraged.

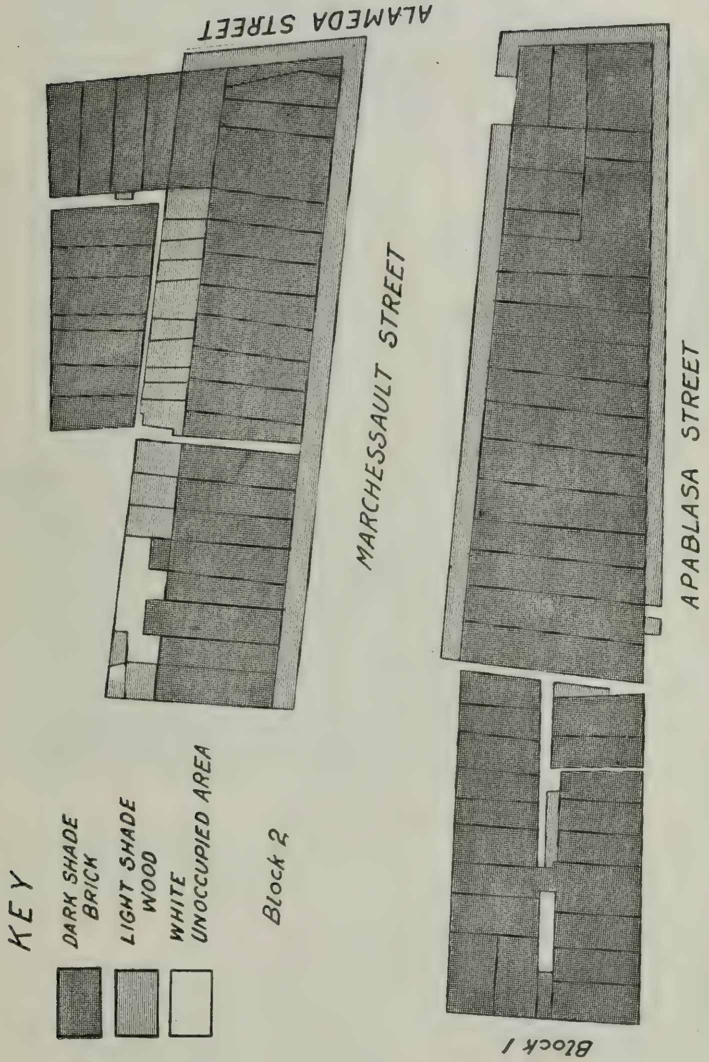
Thus, in so far as it may, the school is solving the problems of the community and no one can say how far reaching its results have been.

Nevertheless, some problems are too fundamental to be met by any social agency. However much the school may teach about cleanliness, it can not force owners to keep their houses in a habitable condition. Only a single house law that will set a standard and enforce its maintenance can make homes of the forlorn dwellings now used. Only regular, remunerative employment for the men will relieve the destitution which has such degenerating effects upon the family.



Class in woodwork and carpentry in Macy Street School, Los Angeles. (See pages 238 to 245 of the text for report of work done by the school in this district.)

However, the presence of such organized constructive effort as the school makes will ultimately awaken the whole city to its responsibility, so that it will be the school in the last analysis, which will accomplish the ideal of making the resident of the Macy Street district the American citizen of our proudest boast.



Block maps of two crowded blocks in Chinatown, Macy street district, Los Angeles, indicating land congestion. Practically entire area of every lot occupied by brick buildings, with attached, dilapidated, "lean-to" wooden sheds and buildings.

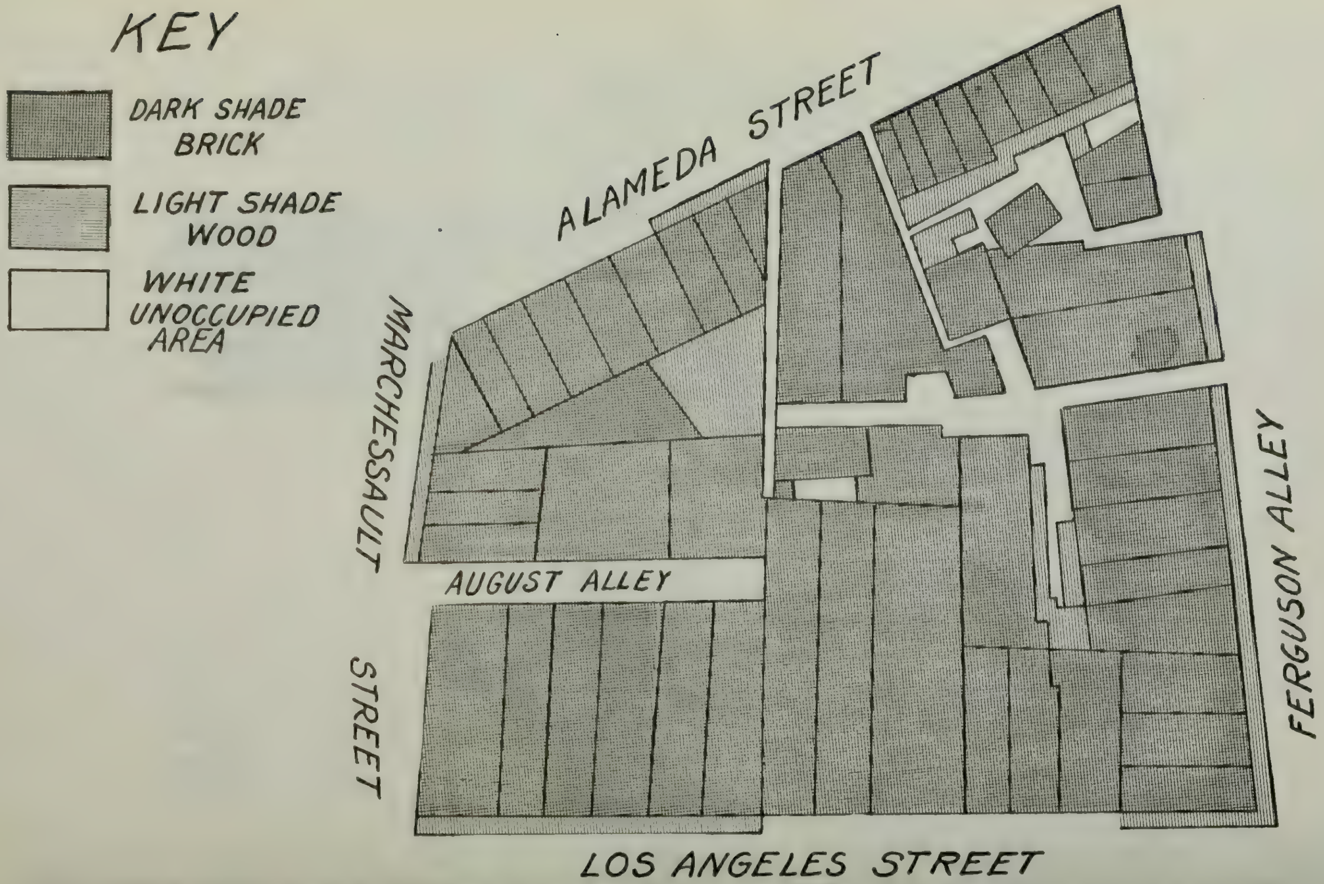


Chart showing crowded block in Chinatown—Macy street district, Los Angeles. Sanitary, healthful housing is impossible where the buildings thus cover practically the entire land area of the block.

(e) Appendices to Macy Street District Survey.

APPENDIX I.

HOUSING CONDITIONS.

Yard-space.

Number of yards in clean condition	192
Number of yards in filthy condition	84
No report	58

House.

Number of families living in 1-story houses	278
Number of families living in 2-story houses	43
No report	13
Number front apartments	244
Number rear apartments	77
No report	13
Number house courts (includes three in Chinatown)	41
Number families living in houses with one apartment	199
Number families living in houses with two apartments	87
Number families living in houses with three apartments	11
Number families living in houses with four apartments	7
Number families living in houses with five apartments	1
Number families living in houses with six apartments	1
Number families living in houses with seven apartments	1
Number families living in houses with eight apartments	2
Number families living in houses with nine apartments	1
Number families living in houses with ten apartments	1
Number families living in houses with fourteen apartments	1
No report	22

Repair.

Number apartments in good repair	161
Number apartments in fair repair	15
Number apartments in bad repair	110
No report	48

Sanitation.

Number apartments with no bath	201
Number apartments with bath	125
No report	8
Number bathtubs (enamel)	87
Number zinc tubs	38
Number apartments using toilets in yard	117
Number apartments using toilets in house	65
Number apartments using toilets on porch	138
No report	14
Number toilets ventilated	251
Number toilets not ventilated	63
Number apartments where toilets are used by one family	161

Sanitation—Continued.

Number apartments where toilets are used by two families	91
Number apartments where toilets are used by three families	28
Number apartments where toilets are used by four families	21
Number apartments where toilets are used by five families	5
Number apartments where toilets are used by six families	1
Number apartments where toilets are used by seven families	11
Number apartments where toilets are used by eight families	2
Number apartments where toilets are used by nine families	1
No report	13
Total number families sharing toilets with other families	159
Number apartments using toilets in clean condition	226
Number apartments using toilets in filthy condition	93
No report	15
Number of apartments with enamel sinks	244
Number of apartments with iron sinks	18
Number of apartments with zinc sinks	4
Number of apartments with no sinks	50
No report	18
Number apartments having no garbage cans	56
Number apartments having metal or tin cans	197
Number apartments where garbage is fed to chickens	62
No report	19

Cleanliness of Building.

Number apartments in clean condition	238
Number apartments in filthy condition	83
No report	13

APPENDIX II.

Table Showing Congestion of Bedrooms.

Size of room.	Cubic feet.	Legal cubic feet.
10′ x 12′ 6″x 11′	1,375	2,500
10′ x 11′ 6″x 13′	1,495	2,000
9′ x 16′ x 12′ 3″	1,764	2,500
9′ 3″x 11′ x 12′	1,221	3,000
11′ 8″x 12′ x 8′	1,120	2,000
13′ 6″x 13′ 6″x 8′	1,458	2,500
10′ x 12′ x 12′	1,440	3,000
10′ x 11′ x 9′ 6″	1,045	2,000
10′ 4″x 14′ x 12′	1,736	3,500
12′ x 10′ x 9′ 8″	1,160	3,000
11′10″x 9′10″x 10′	1,200	2,000
11′ 7″x 13′ 8″x 10′	1,576	2,500
10′ x 10′ x 12′	1,440	3,000
10′ x 9′ x 9′	810	1,500
12′ x 14′ x 10′	1,680	3,000
9′ 4″x 11′ x 11′	1,089	2,500
10′ 3″x 10′ x 8′ 6″	861	2,000
10′ x 14′ 3″x 10′	1,425	2,000
10′ x 12′ x 12′	1,440	2,000
10′ x 12′ x 10′	1,200	2,000
10′ x 10′ x 11′	1,100	2,500
14′ x 14′ x 9′	1,664	3,500
12′ x 10′ x 14′	1,680	3,000
10′ x 10′ x 6′	600	1,500
8′ x 8′ x 10′	640	1,500
10′ x 8′ x 10′	800	1,500
10′ x 8′ x 10′	800	2,000
8′ x 6′ x 10′	480	1,000
8′ x 7′ x 10′	560	2,500
10′ x 8′ x 8′	640	1,000
7′ x 10′ x 10′	700	1,000
10′ x 11′ 6″x 11′ 6″	1,322	2,000
9′ x 10′ x 12′	1,080	1,500
8′ x 13′ x 8′ 2″	849	1,500
9′ 5″x 12′ x 12′	1,416	2,000
10′ x 10′ 4″x 12′ 4″	1,271	2,500
9′ 4″x 8′ 7″x 11′ 6″	924	2,000
9′ 8″x 9′ 5″x 11′ 3″	1,035	3,500
9′ 8″x 9′ 5″x 11′ 3″	1,035	3,500
8′ 2″x 11′ x 11′	990	2,500
8′ 2″x 11′ x 11′	990	2,000
8′ 2″x 11′ x 11′	990	3,500
9′ x 12′ x 14′	1,512	2,500
8′ 7″x 10′ x 11′	944	1,500
7′ 9″x 9′ 5″x 11′	802	1,500
9′ x 10′ 3″x 14′	1,292	2,500
12′ x 12′ x 9′ 3″	1,332	2,000
8′ x 10′ x 12′	960	2,500
9′ x 14′ x 8′	1,008	2,000
7′10″x 14′ x 13′	1,424	3,000
10′ x 8′ x 8′ 6″	680	2,000
12′ x 12′ x 9′	1,296	2,500
10′ x 12′ x 10′	1,200	2,500
10′ x 10′ x 12′	1,200	2,500
10′ x 10′ x 7′ 6″	750	3,500
7′ 6″x 13′ x 10′ 6″	1,018	2,500
9′ x 10′ x 12′	1,080	2,000
9′ x 12′ x 12′	1,296	2,000
11′ x 12′ x 12′	1,584	2,500
11′ x 12′ x 14′	1,848	4,000
10′10″x 9′ 3″x 8′ 7″	859	2,000
10′10″x 9′ 3″x 8′ 7″	859	2,500
12′ x 12′ x 7′	1,008	2,500
9′ x 12′ x 9′	972	3,000
11′ 4″x 11′ 7″x 10′	1,309	3,500
11′ 9″x 9′ 6″x 9′	998	2,500

APPENDIX III.

Table Showing Crowding in Beds.

Clara street	1 bed	4 persons
Clara street	1 bed	5 persons
Clara street	1 bed	4 persons
Vignes street	1 bed	5 persons
Vignes street	2 beds	8 persons
Queirollo street	2 beds	6 persons
Augusta street	1 single cot	*9 persons
Date street	1 bed	6 persons
Queirollo street	1 bed	5 persons
Queirollo street	2 beds	7 persons
Date street	1 bed	4 persons
Date street	1 bed	4 persons
Date street	1 bed	5 persons
Ogier street	1 bed	4 persons
Ogier street	1 bed	3 persons
Avilla street	1 bed	4 persons
Avilla street	1 bed	7 persons
Avilla street	1 bed	4 persons
Avilla street	1 bed	7 persons
Avilla street	1 bed	4 persons
Avilla street	1 bed	7 persons
Bauchett street	1 bed	5 persons
Bauchett street	1 bed	6 persons
Lyon street	1 bed	4 persons
Lyon street	1 bed	6 persons
Lyon street	1 cot	2 persons
Lyon street	0 beds	†7 persons
Howard street	1 bed	6 persons
Howard street	1 cot	
Howard street	1 bed	4 persons
Howard street	1 cot	3 persons
Ramirez street	1 bed	6 persons
Ramirez street	1 bed	4 persons
Macy street	1 bed	4 persons
Macy street	1 bed	5 persons
Macy street	1 bed	7 persons
Macy street	1 bed	4 persons
Macy street	1 bed	4 persons

---

*Several sleep on floor.
†On floor.

APPENDIX IV.

Families Keeping Lodgers.

Number families keeping 1 lodger	36
Number families keeping 2 lodgers	41
Number families keeping 3 lodgers	15
Number families keeping 4 lodgers	10
Number families keeping 5 lodgers	7
Number families keeping 6 lodgers	4
Number families keeping 7 lodgers	4
Number families keeping 8 lodgers	3
Number families keeping 12 lodgers	1
	121

Table Showing Average Number Persons to Room.

Total number persons	1,866
Total number rooms	1,264
Total number bedrooms	715
Total number beds	915
Average number persons to bedroom	2.6
Average number persons to bed	2.03
Number bedrooms with no beds	14 (occupied by 40 persons)

APPENDIX V.

Table Showing Average Rentals and Incomes of Families.

Total income per month for 272 families	$10,436 60
Total rental per month for 256 families	2,629 00
Average income per month per family	36 85
Average rental per month per family	9 30
Average yearly income per family	442 20
Average yearly rental per family	116 60
Average rental per room	2 86

Table Showing Rentals Paid.

Number families paying under $5.00 a month	27
Number families paying from $5.00 to $7.00 a month	66
Number families paying from $7.00 to $9.00 a month	40
Number families paying from $9.00 to $12.00 a month	69
Number families paying from $12.00 to $15.00 a month	47
Number families paying from $15.00 to $18.00 a month	36
Number families paying from $18.00 to $20.00 a month	10
Number families paying from $20.00 to $25.00 a month	11
Number families paying from $25.00 to $30.00 a month	3
Number families paying from $30.00 to $40.00 a month	4
Number families paying $40.00 a month	2

APPENDIX VI.

Table Showing Occupations of Men According to Nationalities.

Occupation	Mexican	Italian	American	Syrian	Slavonian	French	German	Spanish	French Belgian	Spanish Irish	French Italian	German French	Irish	Jewish	Negro	Mexican Syrian	Arabian	Dalmatian	French Spanish	Totals
Baker	1	4																		5
Bar swipe		4																		4
Bootblack		3																		3
Bricklayer		2																		2
Bartender	1	5																		6
Business	2	19	3	7		1	1							1						34
Butcher				1			1					1								3
Boilermaker																		2		2
Carriage painter			2																	2
Cooper								1												1
Carpenter		3		1																4
Cigarmaker		2																		2
Candymaker		1																		1
Chauffeur	1	2																		3
Cook		2																		2
Clerk	1																			1
Dishwasher		1																		1
Flagman	1				1															2
Foreman	2		1						1						1					5
Farm hand		2				1														3
Foundryman		1																		1
Herb raiser						1														1
Hotelkeeper		1						1												2
Laborer	83	60	2	3	31											2			1	182
Laundry	1																			1
Molder			1																	1
Machinist		2			4															6
Mechanic			1			1														2
Mattress maker		1																		1
Musician	2																			2
Peddler		2																		2

Shoemaker	2	1																	3
Stableman	1												1						2
Stevedore			1																1
Salesman		1																	1
S. P. fireman		1																	1
Stone cutter		1																	1
Teacher								1											1
Truck driver			1																1
Teamster	8	2								1					1				12
Unemployed	131	49	3	5	26	1		8		1	1				1		1	1	228
S. P. pensioner			1																1
Jail	2																		2
Retired	1			1															2
No report	1	1	1	1		1													5
Deserted	4																		4
Dead	9	6	2	3	1		2	3											26
Away	1	1																	2
Sculptor		1																	1
Tailor		1																	1
Waiter		1																	1
Pantryman		1																	1
Mailman		1																	1
Porter															1				1

APPENDIX VII.

Table Showing Incomes of Men During Regular Employment.

Number of men receiving under $40 a month	16
Number of men receiving from $40 to $50 a month	19
Number of men receiving from $50 to $60 a month	56
Number of men receiving from $60 to $70 a month	20
Number of men receiving from $70 to $80 a month	14
Number of men receiving from $80 to $90 a month	8
Number of men receiving from $90 to $100 a month	4
Number of men receiving $100 and over a month	9
Number of men receiving no income	228

APPENDIX VIII.

Table Showing Occupation of Women Wage-earners.

	Mexican	Italian	Syrian	Spanish	Slavonian	American	Negro	French Italian	Arabian	French	Total
Laundress	8	12	1	1	------	------	------	------	------	1	23
Garment worker	------	7	2	------	------	------	------	------	------	------	9
Chambermaid	------	3	------	------	------	------	------	------	------	------	3
Keeping boarders	7	7	2	------	2	2	------	------	------	------	20
Seamstress	1	2	3	------	------	------	------	------	1	------	7
Clerk	1	------	1	------	------	------	------	------	------	------	2
Housework	4	------	------	------	------	------	------	------	------	------	4
Cannery	1	------	------	2	------	------	------	------	------	------	3
Midwife	------	2	------	------	------	------	------	------	------	------	2
Washwoman	3	2	2	------	1	------	1	1	------	------	10
Unemployed	5	2	1	1	------	------	------	------	------	------	9
Car-cleaner	------	------	1	------	------	------	------	------	------	------	1
Storekeeper	------	------	1	------	------	------	------	------	------	------	1
Total number of women wage-earners	------	------	------	------	------	------	------	------	------	------	94

APPENDIX IX.

Employment of Father in Families Where Mother is Wage-earner.

Number of families where father is

a. Employed	27
b. Employed irregularly	3
c. Unemployed	28
d. In Mexico	2
e. Dead	18
f. Deserted	4
g. No report on father's occupation	12
Total	94

APPENDIX X.

Table Showing Occupations of Children of Families According to Nationality.

	Mexican	Italian	American	Syrian	Spanish	Irish	Slavonian	Negro	French Italian	German	Arabian	French	Jewish	Total
Unemployed	22	3	2	2	1	-----	-----	1	-----	-----	-----	-----	-----	31
Delivery boy	2	1	-----	1	1	-----	-----	-----	-----	-----	-----	-----	-----	5
Electrician	-----	1	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	1
Clerk	1	4	3	1	-----	-----	-----	-----	-----	1	-----	-----	1	11
Seamstress	1	-----	-----	1	-----	-----	-----	-----	-----	-----	-----	-----	-----	2
Laborer	9	5	-----	2	1	-----	1	-----	1	-----	2	-----	-----	21
Laundry	5	4	-----	-----	-----	-----	-----	-----	-----	-----	-----	2	-----	11
Waitress	1	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	1
Sloyd shop	1	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	1
Marble cutter	-----	1	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	1
Conductor	1	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	1
Factory worker	5	6	-----	-----	-----	-----	1	-----	-----	-----	-----	-----	-----	12
Garment worker	1	2	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	3
Chauffeur	-----	1	1	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	2
Electrical plater	-----	1	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	1
Machinist	1	-----	-----	-----	-----	1	-----	-----	-----	-----	-----	-----	-----	2
Demonstrator	-----	1	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	1
Cashier	-----	1	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	1
Stenographer	-----	1	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	1
Barber	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	1	-----	1
Newsboy	-----	-----	1	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	1
No report	-----	2	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	2

APPENDIX XI.

Total number of families interviewed	359
Total number persons included	1,868
Adults	1,271
Children (14 years and under)	597
Average number of persons to family group	5.2
Number families keeping lodgers (33 per cent)	121
Number families having relatives in household	69
Number families having children in school (50—no report)	163
Number fathers naturalized (50—no report)	49

Literacy of Foreign Families.

Number families where both parents speak English	109
Number families where parents speak no English	130
Number families where father speaks English	19
Number families where mother speaks English	5
Number families where parents speak only a little English	22
No report	55

Savings and Insurance.

Number families with bank savings	35
Number families owning property	47
Number families with no savings or insurance	242
Number families with accident policies	3
Number families carrying life insurance	39
French Hospital benefit	1
Railroad Hospital benefit	1

Religion.

Number of Catholics	253
Number Baptists	5
Number Presbyterians	2
Number Congregational	1
Number Protestants (kind not specified)	6
Atheist	1
Jewish Orthodox	1
Greek Catholics	2
No church affiliation	9
No report	79

Societies and Lodges.

Moose	5
Foresters	4
Masons	2
Woodmen of the World	3
Hibernian	1
Maccabees	1
Garibaldi Society	1
Druid	1
Syrian Society	1
St. Peter's Benefit	1
Total	34

Employment.

Men—	
Number employed	187
Regular employment	144
Irregular employment	43
Number unemployed	228
Women—	
Number wage-earners	94
Children—	
Number children employed	82
Number children unemployed	31
Number children having irregular employment	5

APPENDIX XII.

Table Showing Nationalities of 359 Families.

Mexican	154
Italian	121
Syrian	29
Slavonian	11
Spanish	10
French	5
Dalmatian	1
Irish	1
German	5
Belgian	1
Arabian	1
Jewish	1
American	16
Negro	3

APPENDIX XIII.

Nationality of Pupils in Macy School as Compiled by Principal.

		Per cent
Mexican	190	34.3
Italian	150	27.0
Syrian	68	12.1
French	50	9.0
Chinese	15	2.7
Indian	11	2
Jewish	8	1.4
Negro	8	1.4
American	6	1.1
Slavonian	6	1.1
Basque	5	.9
Montenegrin	4	.7
German	4	.7
Russian	4	.7
Spanish	4	.7
Scotch	4	.7
Japanese	3	.5
English	3	.5
Welch	3	.5
Dutch	2	.4
Belgian	2	.4
Irish	2	.4
Argentinian	2	.4
Swiss	1	.2
Cuban	1	.2
	556	100.0

APPENDIX XIV.

Table Showing Number of Years Parents Have Been in United States and California.

	In United States.		In California.	
	Father.	Mother.	Father.	Mother.
Less than 1 year	6	7	12	13
1 year	13	15	23	25
2 years	15	13	19	18
3 years	19	15	20	20
4 years	19	25	24	30
5 years	21	20	18	20
6 years	5	6	9	7
7 years	13	12	12	11
8 years	12	9	11	8
9 years	8	5	9	5
10 years	12	10	16	14
11 years	5	4	4	4
12 years	9	7	8	6
13 years	5	5	4	4
14 years	3	4	5	5
15 years	12	11	4	4
16 years	5	4	1	2
17 years	6	5	2	2
18 years	1	1	1	1
19 years	2	1	1	1
20 years	5	3	5	2
22 years	1	4	3	4
23 years	2	5	1	3
24 years	1	----------	----------	----------
25 years	8	10	5	8
26 years	1	2	1	1
27 years	1	2	1	2
29 years	1	1	1	----------
30 years	1	----------	1	----------
31 years	----------	----------	1	1
32 years	2	1	1	1
34 years	1	1	1	----------
35 years	2	1	1	----------
45 years	----------	1	----------	----------
49 years	----------	1	----------	1
60 years	----------	1	----------	----------

APPENDIX XV.

Number of Families in Which Parents Speak English, According to Nationality.

	Speak English	Speak no English.	No report.
Mexican	45	84	25
Italian	68	31	22
Syrian	21	7	1
Slavonian	3	4	4
Spanish	3	4	3
French	5	0	0
Dalmatian	1	0	0
Irish	1	0	0
German	5	0	0
Belgian	1	0	0
Arabian	1	0	0
Jewish	1	0	0
Total	155	130	55
American	16		
Negro	3		

APPENDIX XVI.

	Naturalized.	Not naturalized.	No report.
Mexican	8	101	29
Italian	29	50	37
Syrian	3	19	4
Slavonian	1	5	5
Spanish	0	4	2
Dalmatian	0	1	0
French	3	3	0
Irish	1	0	0
Belgian	1	0	0
Arabian	0	1	0
German	3	0	0
Total	49	184	77

APPENDIX XVII.

INDUSTRIES.

Number of People Employed in Thirty-three Industries in Macy Street School District.

Total employees	1,499
Number male employees	1,446
Number female employees	53
Number skilled men	886
Number unskilled men	560
Number skilled women	50
Number unskilled women	3

Nationalities of 1,499 workers.

American	750
Italian	126
Mexican	169
Spanish	8
Greek	72
Japanese	2
Slavonian	40
English	7
Russian	157
Armenian	131
Roumanian	1
German	30
Jewish	6

APPENDIX

Industries in Macy

Industry.	No. years operating	No. of employees		Men		Women.		Wages per day.					Hrs.
		Male	Female	Skilled	Unskilled	Skilled	Unskilled	$2.00	$5.00	$2.75 to $3.00	$3.00 to $3.50	$4.50 a day	Eight
Bakery	-----	5	1	5	-----	-----	1	$17 a week.			-----	-----	-----
Horseshoeing shop	-----	2	-----	2	-----	-----	-----	-----	-----	-----	-----	-----	-----
Horse corral and feed yard	12	1	-----	-----	1	-----	-----	1	-----	-----	-----	-----	-----
Japanese laundry	3	1	1	1	-----	1	-----	-----	Owners.		-----	-----	-----
Mule corral	12	1	-----	-----	1	-----	-----	-----	-----	-----	-----	-----	-----
Mule corral	22	1	-----	-----	1	-----	-----	-----	-----	-----	-----	-----	-----
Mule corral	8	2	-----	-----	2	-----	-----	-----	-----	-----	-----	-----	-----
Stone yard	5	17	-----	13	4	-----	-----	-----	13	4	-----	-----	17
Shoeing shop	(?)	1	-----	1	-----	-----	-----	-----	-----	-----	-----	-----	-----
Horse and mule corral	4	4	-----	-----	4	-----	-----	4	-----	-----	-----	-----	-----
Horse and mule corral	1	2	-----	-----	2	-----	-----	-----	-----	-----	-----	-----	-----
Horse and mule corral	6	1	-----	-----	1	-----	-----	-----	-----	-----	-----	-----	-----
Junk yard	4	2	2	-----	2	-----	2	--	*M. $12 a week *W. $7 to $8 week				2
Machine shop	2	10	-----	10	-----	-----	-----	-----	-----	-----	10	-----	-----
Pacific Trunk Factory	2	7	1	7	-----	1	-----	$16 to $17 a week.				-----	1
Beef packing house	4	306	12	179	127	12	-----	-----	-----	-----	-----	-----	12
Mule and horse corral	12	1	-----	-----	1	-----	-----	-----	-----	-----	-----	-----	-----
Macaroni factory	4	4	-----	4	-----	-----	-----	2	-----	2	-----	-----	-----
Veterinary	2	1	-----	-----	1	-----	-----	-----	-----	-----	-----	-----	-----
Draying	6	10	-----	-----	10	-----	-----	$16 to $19 a week.				-----	-----
Draying	6	6	-----	-----	6	-----	-----	-----	-----	6	-----	-----	-----
Horse and mule corral	5	1	-----	-----	1	-----	-----	-----	-----	-----	-----	-----	-----
Metal doors, windows, etc.	2	11	1	10	1	1	-----	-----	-----	1	-----	10	12
Machine shop	-----	3	-----	3	-----	-----	-----	-----	-----	-----	3	-----	-----
L. A. Pressed Brick Company	12	143	-----	18	125	-----	-----	$2 to $4 a day.				-----	-----
Planing mill and yard	30	40	-----	20	20	-----	-----	$2 to $4 a day.				-----	-----
Gas works	48	182	-----	110	72	-----	--	*S. $65 to $150 a mo. *Uns $2 to $2.40 a day.					22
Machinery and foundry	28	58	-----	40	18	-----	-----	35c per hour.			-----	-----	-----
Machine and blacksmith shop	9	46	3	40	6	3	-----	42c per hour.			-----	-----	10
(Beef) packinghouse	25	570	30	420	150	30	-----	$1.75 to $4 a day.				-----	30
Los Angeles Baking Company	2	3	-----	3	-----	-----	-----	3	-----	-----	-----	-----	-----
Pipe yard	5	4	-----	-----	4	-----	-----	4	-----	-----	-----	-----	-----
Dressmaking shop	1	-----	2	-----	-----	2	-----	Piece work.			-----	-----	2

*S., skilled; Uns., unskilled; M., men; W., women.

XVIII.

School District.

Hours.		Help secured	Nationalities.												
Nine	Ten		American	Italian	Mexican	Spanish	Greek	Japanese	Slavonian	Russian	English	Jewish	Armenian	Roumanian	German
------	------	Office	------	2	2	1	1	------	------	------	------	------	------	------	------
------	------	Office	2	------	------	------	------	------	------	------	------	------	------	------	------
------	1	Office	1	------	------	------	------	------	------	------	------	------	------	------	------
------	------	------	------	------	------	------	------	2	------	------	------	------	------	------	------
------	1	Office	1	------	------	------	------	------	------	------	------	------	------	------	------
------	1	Office	1	------	------	------	------	------	------	------	------	------	------	------	------
------	2	Office	2	------	------	------	------	------	------	------	------	------	------	------	------
------	------	Office	14	2	------	------	------	------	------	------	1	------	------	------	------
------	------	------	1	------	------	------	------	------	------	------	------	------	------	------	------
------	4	------	3	------	1	------	------	------	------	------	------	------	------	------	------
------	2	------	2	------	------	------	------	------	------	------	------	------	------	------	------
------	1	------	1	------	------	------	------	------	------	------	------	------	------	------	------
------	2	Office	------	------	------	------	------	------	------	------	------	4	------	------	------
10	------	Office	8	------	------	------	------	------	------	------	1	------	------	1	------
7	------	Office	6	------	------	------	------	------	------	------	------	2	------	------	------
92	214	Office	219	42	13	4	10	------	------	20	------	------	10	------	------
------	1	------	1	------	------	------	------	------	------	------	------	------	------	------	------
------	------	------	------	4	------	------	------	------	------	------	------	------	------	------	------
------	1	------	1	------	------	------	------	------	------	------	------	------	------	------	------
------	10	Office	10	------	------	------	------	------	------	------	------	------	------	------	------
6	------	------	6	------	------	------	------	------	------	------	------	------	------	------	------
------	------	Office	1	------	------	------	------	------	------	------	------	------	------	------	------
------	------	------	11	------	------	------	1	------	------	------	------	------	------	------	------
3	------	Office	3	------	------	------	------	------	------	------	------	------	------	------	------
143	------	Office	48	60	------	------	------	------	35	------	------	------	------	------	------
------	------	------	20	------	------	------	------	------	3	15	2	------	------	------	------
------	160	------	145	12	17	1	------	------	2	2	2	------	1	------	------
58	------	------	40	2	16	------	------	------	------	------	------	------	------	------	------
48	------	Office	48	1	------	------	------	------	------	------	------	------	------	------	------
160	380	Office	150	------	120	------	60	------	------	120	------	------	120	------	30
------	------	------	------	1	------	2	------	------	------	------	------	------	------	------	------
4	------	------	4	------	------	------	------	------	------	------	------	------	------	------	------
------	------	------	1	1	------	------	------	------	------	------	------	------	------	------	------

(f) Los Angeles. (Chinatown.)

Though housing and living conditions were bad throughout the district surveyed, the real housing problem was found in that section occupied by the Chinese. There seems to be a separate housing standard for the Chinese. Comment on their bad living quarters usually brings forth a remark such as, "Yes, conditions are bad, but they are Chinese!" There seems to be no effort to raise their standards or to furnish them the protection of sanitary laws. Moreover, the fact that the rest of the community should be protected from such bad housing conditions does not seem to be considered. When the Chinese are permitted to live in darkness, amidst insanitary, crowded, squalid conditions, they are a menace, not only to themselves, but to the entire community, for their children mingle with the other children in the public schools, and the men supply practically all the vegetables to the homes of the city, while the Chinese laundryman is the oldest link between Chinatown and the rest of the community.

In this section most of the houses are tenements and lodging houses, covering whole blocks; the majority of the houses being two-story brick buildings. The few unoccupied areas in these blocks are usually cluttered up with chicken coops, junk and rubbish. (See maps.) Attached to the rear of the brick buildings are flimsy wooden porches and additions, many of them built of dry goods boxes, giving the houses a dilapidated appearance. The porches not only are unsafe structurally, but they are a fire menace, because many kitchens with their open Chinese brick stoves, are located on these porches. The false floors in the rooms, the dark, narrow passage-ways, and the maze of dark, windowless rooms, make these buildings veritable fire traps. Fire-escapes are few and the only exit in many places is the one front door. Rear yards and entrances are most unusual.

As is the Chinese custom, the little shop in front is the entrance to the living quarters in the rear. Only 76 of the 252 apartments opened directly on the street. The street door and one window, often partly boarded up, are the only means of ventilation for store as well as sleeping rooms. Kitchens sometimes have skylights or windows opening on to small, unoccupied areas in the rear. Of the 1,572 rooms investigated, kitchens included, 878 were found totally dark and windowless, lighted only by a dim candle-light or gas jet which seemed to enhance the blackness. These rooms, partitioned off from the store in front, are often hidden away behind heavy bolted invisible doors.

The built-in, mezzanine-like floors found in almost every house are also dark and even more stuffy than the rooms below. They are reached by steep, narrow, ladder-like stairs, or by ladders which hang on the wall when not in use. The ceilings are sometimes less than four feet high and usually only six feet. Dust, dirt and filth accumulate here in the darkness and provide breeding places for disease germs. As shown by the health records, the deaths from tuberculosis were more numerous than in other sections of this district.

Many rooms were obviously overcrowded with wooden bunks used by the Chinese in preference to beds, but the exact extent of overcrowding could not be ascertained, as so many of the occupants are transients (Chinese, working on ranches, who come in from the country). The most crowded sleeping rooms are often used as kitchens —with oil stoves and gas plates, or open, smoky fires. As a general rule, in the lodging houses, a public kitchen is set apart for use of occupants. There each Chinaman builds his separate fire and cooks his own pot of rice or chop suey. Bunks are found everywhere—in the rear of restaurants, where live chickens, groceries, cooked food and meat are kept; in the rear of butcher shops, with the meat and lard; in with the green vegetables in the rear of grocery stores; in stables, and sheds with horses.

Kitchens were found in as filthy condition as the bedrooms, filled with rubbish and decaying matter, swarming with flies, overrun with cockroaches and rats. Vermin swarmed in the slime found on the rotting board floors under insanitary, leaking sinks.

In spite of the general cleaning up on account of the Chinese New Year season, the houses were, as a rule, in a bad state of repair, and in a filthy condition. The wall paper was generally torn and dirty, sometimes eight layers thick; plaster was broken and falling off in many places from leakage in plumbing; the rough flooring broken and rat eaten.

Cellars were found full of standing water and rubbish. In the rear of one restaurant there was a large, deep hole near the cellar door, filled with several feet of water, and, at the time of investigation, a dead chicken and rotting garbage floating in the water polluted the air throughout the neighborhood. In direct contrast to this filthy place, and as proof that Chinese can be as clean as any race, in the house adjoining the restaurant, two Chinese families kept their rooms spotlessly clean; the gas plates and the brightly shining zinc around stove and sink, would put any model housekeeper to shame.

Little attention seems to be paid by the city officials to the insanitary plumbing conditions that were found. Five instances were noted where the sink was not connected with the sewer at all, and other cases where it was improperly connected. In one case the water from the sink drained into a tin bucket; in another, it drained into a Chinese basket, and the floor underneath was a slimy mass of wet, rotten refuse and vermin; a third sink emptied into a deep hole worn under the broken flooring. Leaking drain pipes were numerous in both sinks and toilets, making the floors wet and causing them to rot.

Even worse plumbing and sanitary conditions exist in connection with toilets. Most of the toilets open directly into the kitchens, with no other means of ventilation than from the kitchen. In 133 apartments, toilets were found so situated, and one was in a dining room. These toilets, used by many persons, are in filthy condition and the sickening odors therefrom permeate the entire house. Floors are wet, the walls filthy, the compartments dark and unventilated, and the toilet bowl often broken. Eight privy vaults were found and five of these were nothing but holes in the ground with a board frame. One of these vault toilets was found in the school yard of the Juan Street mission school and was used by the Chinese children in attendance. The others were located in Chinese vegetable corrals.

The corrals or barns, accommodating from two to three hundred Chinamen, horses and wagons, present a peculiar problem to the city. Horses, wagons, Chinamen, and the fruit and vegetables left over from the day's sales, are housed indiscriminately in long sheds and barns; the rooms in which the Chinese live are without windows, light or ventilation, and present the same appearance of filth and disorder as the rooms of the tenements. The flies from the horse stalls and the privies are an ever-present nuisance. In one of these sheds the horses were seen drinking out of the same trough in which a Chinaman had placed large bunches of celery to keep it fresh for the next day; a huge pile of uncovered manure adjoined the trough. All the unsold vegetables and fruit brought in at the end of each day, are kept in these corrals overnight. From these places comes the chief vegetable supply of the city.

Families in the Chinese district are few; a few of them live in old, tumble-down shacks, a few in rooms in lodging houses or tenements. One hundred and six children were counted. The majority of these children attend the Mission schools; 15 children attended the Macy Street School, a few went to the Hewitt School at the opposite end of the district. Due to an old disagreement between the Chinese and Mexicans in the neighborhood, the Chinese have been reluctant to send their children to the Macy School, giving, however, as their reason, that the school is too far away and their children must cross the street car tracks. In the Juan Street Mission School, conducted for some twenty years, there were in attendance twenty-one children in the primary department, and twenty-three in the grammar grades. An interesting Chinese school was being conducted in "Nigger Alley." After the regular hours in the American schools, from twenty to thirty little Chinese children come here for an hour to learn and study the language and literature of their mother country. Eight mission societies were at work in Chinatown; this included the Y. M. C. A. school for Chinese. Little attention seems to be paid to the teaching of sanitation and the American standards of living in these schools.

But before much can be expected from the Chinese, they must be provided with clean, decent quarters, with plenty of fresh air and sunshine. The dark, airless rooms, which are a violation of the Tenement House law, or any other laws, should not be permitted; property owners should be compelled to install modern sanitary plumbing which should be kept in good order and in clean condition; finally the Chinese should receive the same protection as the white man against bad insanitary living conditions; but they must also be made to obey those laws. The "one standard for the Chinese, another for the white man," should not be permitted in any civilized community.

At the date of writing this report, little or nothing has been done to improve conditions. Some of the streets have been repaired; a few houses have been painted, one new vegetable corral has been erected—but the housing conditions have changed only for the worse.

APPENDIX XXI.

HOUSING CONDITIONS IN CHINATOWN.

Entrance to Apartments.

Number apartments in rear of stores	134
Number apartments opening on street	53
Number lodging houses	23
Number apartments in rear of restaurants	10
Number apartments in rear of barber shops	11
Number apartments in rear of butcher shops	5
Number apartments locked	16

Rooms.

Number rooms investigated	1,572
Number inside rooms	878
Number bunks	1,237
Number rooms on "built in" or "false" floors	233
Entrance to false floors—by stairs	64
Entrance to false floors—by ladders	50
Stairs lighted	5
Stairs not lighted	109
Number bunks on false floors	274
Number cellars occupied for living purposes	10

Sanitation.

Number toilets located in kitchens	133
Number toilets located on porches	34
Number toilets located in yards	31
Number toilets located in rear of stores	17
Number toilets located in bedrooms	4
Number toilets located in hallways	20
Number toilets located in cellar	1
Number toilets located in bathrooms	2
Number toilets located in dining rooms	1
Number houses with no toilets	9
Number privy vaults	8
Number toilets ventilated	49
Number toilets not ventilated	194
Number toilets in clean condition	71
Number toilets in filthy condition	172
Number toilet compartments in good repair	67
Number toilet compartments in bad repair	150
Number compartments where toilet is broken	17
No report	9
Number apartments with baths (4 were bathhouses)	16
Number apartments without baths	236
Number apartments with enamel sinks	154
Number apartments with wood sinks	56
Number apartments with zinc sinks	14
Number apartments with iron sinks	1
Number apartments with stone sinks	1
Number apartments with no sinks	18
Number sinks in good condition	107
Number sinks in bad condition	137

Other Nationalities in Chinatown Beside Chinese.

Japanese families	11
Corean families	1
Cuban families	1
Armenian families	1
Mexican families	3
American and Chinese	1

IV. SAN FRANCISCO.

The large number of destitute Spanish and Porto Rican families on Telegraph Hill was called to the attention of the Commission by the San Francisco Associated Charities. The charities organization has been administering continual aid to these people over a period of years and a combined housing and unemployment investigation was asked for. This was the only housing work done by the Commission in San Francisco during the year. The investigation of some 60 families in January, 1915, showed that these people had come from the Hawaiian Islands, where they had previously been sent or brought from Spain and Porto Rico by plantation owners. On the sugar plantations they earned from $16.00 to $20.00 a month. Attracted by agent's promises of high wages and continuous jobs, these simple, gullible folk came to California only to discover that there is little or no employment to be found, at least to which they are adapted. In the summer months entire families work in the fruit and hop regions, in the winter they return to San Francisco and crowd into the wretched shacks and tenements on Telegraph Hill, struggling through the winter with the assistance of charitable organizations.

Over 70 per cent of the families visited had been residents of California less than three years, and, with the exception of the children, practically none of the people could speak English. Heads of 40 of the 63 families had been without employment for periods of three and four months; the remainder for periods up to eleven months. The significant fact was that all were unemployed during the winter, and, since their earnings in the summer were meagre, poverty amongst them was severe.

Families were large, children and lodgers numerous. Families were often compelled to double up in three or four rooms to meet the cost of rent. Over half of these people were living in the ancient shacks still standing on the bay side of Telegraph Hill, the others in wretched tenements. The shacks are so tumble-down, so insanitary because of lack of plumbing facilities, that they are absolutely unfit for human habitation. In 52 homes, in which measurements could be made, overcrowding of bedrooms was prevalent.

In 12 houses, less than 150 cubic feet of air was allowed per person.
In 10 houses, between 151 and 200 cubic feet of air was allowed per person.
In 20 houses, between 201 and 300 cubic feet of air was allowed per person.
In 10 houses, between 301 and 350 cubic feet of air was allowed per person.

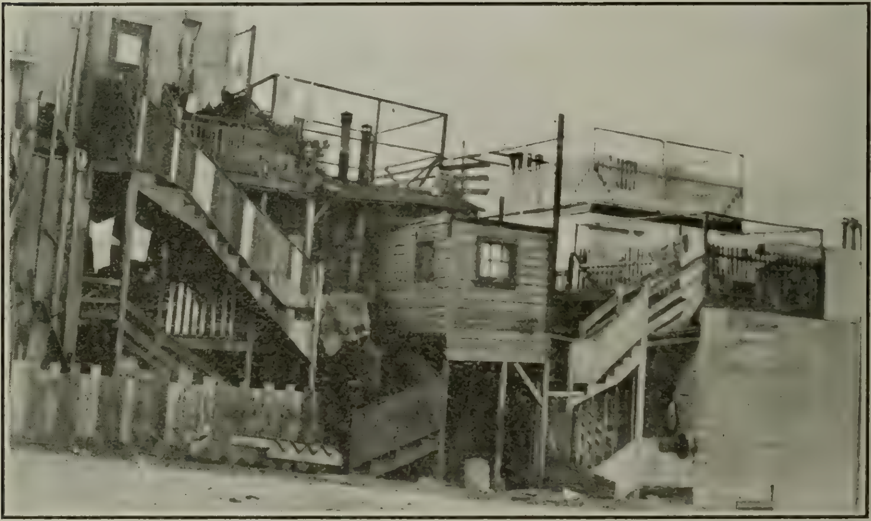
The roofs of these shacks were all leaking and the exterior walls broken and nonweather proof. Window panes were usually broken out and the openings crudely boarded up with shingles. Garbage was scattered about both inside and outside of the houses. Toilets used in common by many families were broken and of obsolete style. The open sewers on the hillsides and broken drain pipes added to the insanitary conditions.

The kitchens seemed to be the only heated rooms and consequently were overcrowded with children, boarders, and often chickens and dogs. The scarcity of furniture, the filthy heaps of rags used for bedding, and the damp, musty smells, make the winter quarters of these families most pitiable. Owing to the fact that they are almost all in arrears with their rent, they can neither afford to move to better quarters nor make complaint to landlords for fear of being evicted. So they continue living in filth and wretchedness until summer comes, and again they migrate to the country.

(D) REPORTS MADE TO COMMISSION BY VARIOUS CITY HOUSING OFFICIALS.

I. SAN FRANCISCO.

As reported last year, two tenement house inspectors were appointed in San Francisco at the beginning of the fiscal year, July 1, 1914. The Health Department has made a conscientious effort to enforce the law through these two inspectors, but more inspectors are obviously required. The following is a tabular summary of the annual report of these inspectors, preceded by extracts from the written report. One of the most encouraging features of the report is the fact that the department is strictly enforcing the section of the law requiring certificates of occupancy for new buildings. The difficulties encountered in beginning the enforcement of law several years after it has gone into effect should be a warning to newer communities.

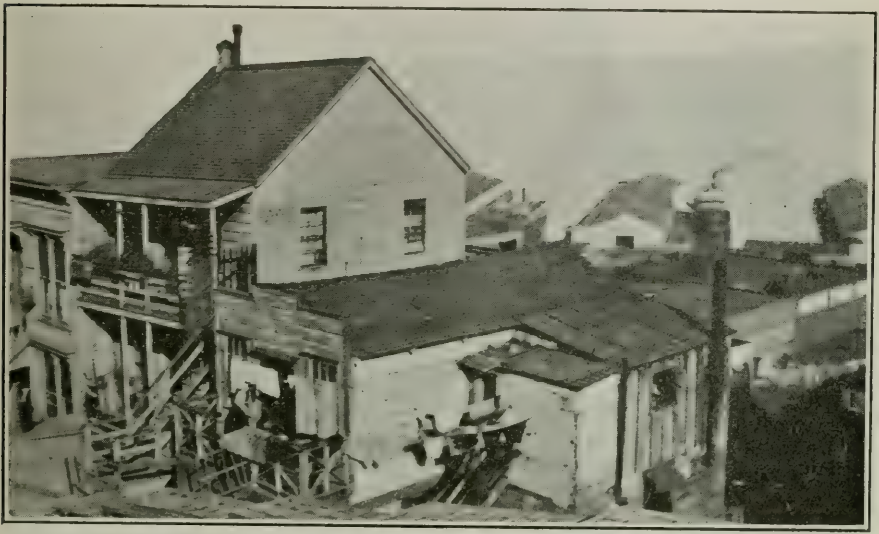


Crowded lot areas in San Francisco. Rear porches of tenements and shacks built up to line of adjoining vacant lot.

(a) Report of Tenement House Inspectors.

"The builders of bad tenements and lodging houses, while in many instances knowingly creating the conditions, believe they are protected because the city formerly permitted the violations. The architects and contractors declare they planned to the owner's wish; and as he demanded rooms and apartments at the expense of light and sun, they were helpless. Greed, then, as well as ignorance, is responsible for woeful situations, and man, in all his impertinence, is selling sunlight which God dispensed free to all.

"Inspection of new lodging houses, hotels and tenements by the Board of Health has been very recent, but the influence has been felt and acknowledged and many violations prevented. The department has been most insistent that no tenement, lodging house or hotel be occupied until a permit of occupancy has been granted by the Board of Health. In some cases it has been necessary to threaten the arrest of an owner because of his contempt of the law after being notified by the department.



Mixture of tenement houses and shacks in San Francisco. The shack in the foreground was occupied by four families—yet subject to practically no sanitary or housing regulations.

"The tenement house law needs strengthening. The hotel and lodging house law needs revising; and I believe the court and yard area should be of the same dimensions required by the Tenement House Act, as grave problems face us in this respect."

Fiscal Year 1914-1915.

Old Buildings.

Total number of inspections		3,799
Total number of reinspections		559
Complaints referred to other departments	42	
Premises recommended for condemnation	50	
Referred to Housing Committee of Board of Health	31	
Premises condemned	3	
First notices of complaint sent	55	
Complaints abated	661	
Personal visits to owners, agents and other departments of government in regard to complaints	299	

New Buildings.

Total number of inspections		108
Total number of reinspections		25
First notices of complaint sent	32	
Referred to Housing Committee of Board of Health	12	
Complaints referred to other departments	1	
Plans for construction rejected	1	
Total inspections		4,491
Plans inspected and certificates of occupancy granted		217

**Abatements to June 30, 1915.*

Premises torn down	7
Premises remodeled	5
Dark rooms abated	116
Courts enlarged	11
Walls removed between rooms	10
Enlarged and new windows	47
Skylights removed and ventilated	7
Woodwork about sinks removed	39
Rooms painted or papered	109
Premises cleaned of refuse, etc.	60
Yards concreted	4
Courts concreted	7
Chimneys repaired	9
Roof yards replaced	2
Stable under tenement condemned	1
Toilets ventilated	87
Toilets painted	115
Toilets (new) installed	3
Toilets removed	2
Toilet floors concreted	2
Baths installed	3
Courts ventilated	2
Vacation of cellars and basements	10
Janitor service installed	2
Congestion abated	1
	661
Through plumbing department	12
Through sewer department, Board of Public Works	1
	674

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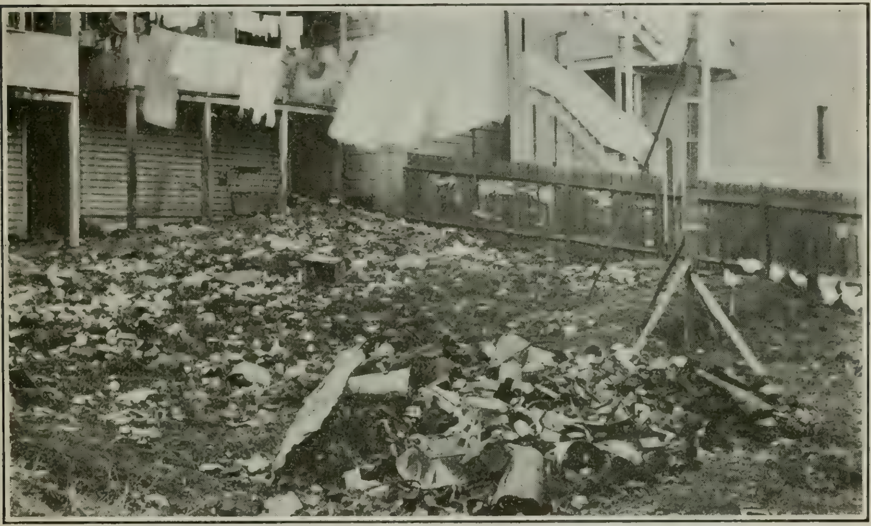
*150 owners of tenements on Telegraph Hill have promised to tear down buildings when leases on land expire in 1916.

II. SACRAMENTO.

The two surveys of bad housing made by the Commission in Sacramento, described in last year's report, and the subsequent efforts to bring about improvements through the city officials, have met with small success. There have been a few spasmodic attempts by the health officer to enforce general sanitary regulations, but no real or lasting results have been, or ever can be, achieved by such methods. Within the year the Commission plans to use its new power under the Tenement House Act as an entering wedge to prove the necessity for regular and follow-up housing inspection in Sacramento.

III. SAN DIEGO.

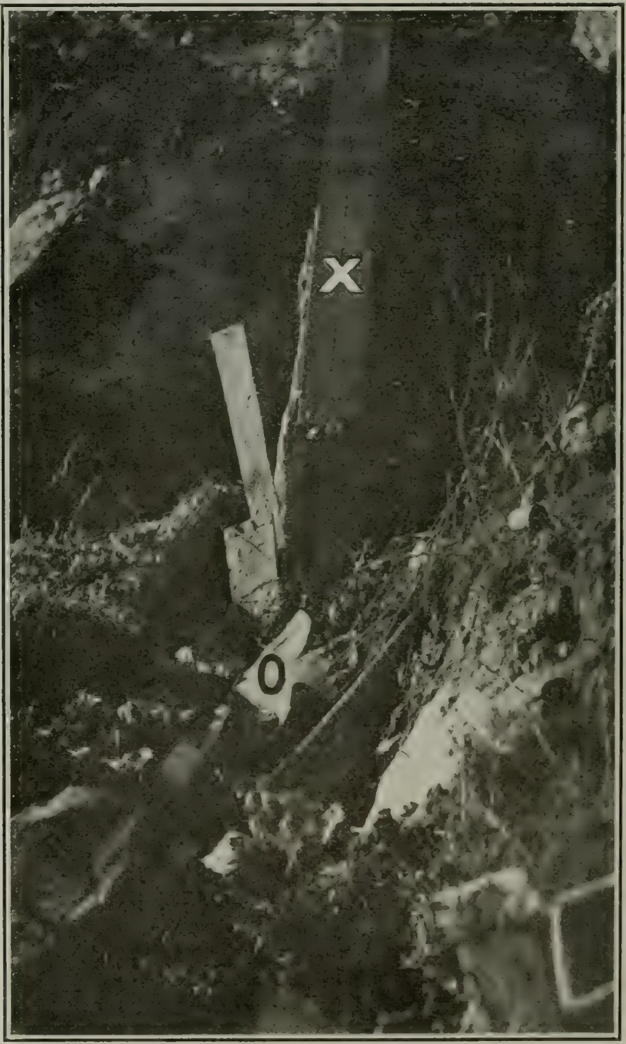
It is to be regretted that the report of the San Diego Health Officer to this Commission shows that the services of one hotel, lodging and tenement house inspector has been required in connection with the work of other departments, and that the housing work has consequently suffered somewhat. However, much effective work had been done during the previous year, and it is also encouraging to note that the work this year was broadened to include many houses other than hotels and tenements. Especially is San Diego to be congratulated for courageously facing its shack and Chinatown housing problems. The clean-up campaign in Chinatown, particularly, marks a housing epoch in California, and it is to be hoped that other cities will follow this example. San Diego has realized that housing work is not complete and furnishes no protection unless the districts inhabited by Chinese are brought up to the same standard as other districts. Likewise the accomplishments in tearing down and improving insanitary shacks show what can be done under general health laws if a health department fearlessly attacks the problem.



Garbage and rubbish pile in rear of tenement houses on a much-used thoroughfare in San Francisco—the lot is partially hidden from view by a high board fence along the sidewalk.

Extracts From Inspector's Report.

"With the commencement of our second year of inspection of hotels, lodging houses and tenements, we found conditions greatly improved. This is a result not only of the incessant effort on our part to secure compliance with the laws regulating the maintenance and construction of all structures coming under our jurisdiction, but it is also due to the fact that owners and lessees, after observing the beneficent results from the enforced betterment of their property, have on their own initiative, made, in a great many cases, improvements and repairs that were not ordered by this department.



The cross (X) shows a broken, rotted box sewer—carrying sewage from several apartments to marshy sump hole (O) in vacant lot, San Francisco.

"We have, of course, found that a great number of nuisances were being maintained, and the results of our attempts at abatement are shown below:

Number rooms (where vermin were found) cleaned and fumigated	306
Number rooms where walls and ceilings were repaired (plaster)	60
Number rooms repapered, repainted, recalsomined	513
Number rooms provided with sufficient light and ventilation	15
Number water-closets installed	4
Number sinks installed	10
Number unserviceable hoppers, laundry trays, bath tubs, or sinks removed	3
Number carpets, rugs, blankets or matting destroyed	231
Number carpets, rugs, blankets or matting cleaned	256
Number yards cleaned	30
Number roofs ordered repaired	11
Number water-closet compartments cleaned and painted	15
Number of fire escape lights installed	3
Number miscellaneous nuisances abated	152
Number of buildings condemned and vacated	8
Number of buildings where general clean-up was ordered	17
Total number of hotels inspected	17
Total number of lodging houses inspected	288
Total number of tenement houses inspected	569
Total number of combination lodging and tenement houses inspected	61

(a) Water Front and Chinatown Campaign.

"For a great many years past there has existed in San Diego a housing problem that has year after year been assuming more and more terrifying proportions, namely, the buildings on our water front, and in the district in the lower part of the city designated as Chinatown.

"In July of this year a campaign was started with the object of making the water front property that had for many years been occupied by squatters, a benefit and source of revenue to the city, instead of the most unsightly as well as insanitary part of the community.

"We encountered a great deal of opposition on the part of the squatters, as well as from many persons owning, or claiming to own, the property on which some of these shacks were located. But we were able, through the medium of the state law and certain city ordinances, to declare these buildings unlawful, some for the reason that they were on the city tide lands without a franchise, others as unsafe and insanitary, and others on account of being obstructions to navigible waters.

"During our operations on the water front district we disposed of 152 buildings in the manner indicated below:

Buildings razed	63
Buildings moved*	55
Buildings destroyed by fire	30
Buildings partly razed and partly moved	4
Number of rooms affected	279

*From 30 of the buildings moved, lean-tos or sheds were detached and destroyed on account of insanitary conditions. Twelve wharves were removed or destroyed.

"Next turning our activities in this line to the Chinatown district, we found many of the inhabitants of this quarter living in conditions of filth that are indescribable. We condemned 124 buildings, which were disposed of as follows:

Residences and places of business razed	99
Stables destroyed	20
Lean-tos destroyed	5
Rooms affected	252
Stalls affected	74

"It has been our method of procedure throughout our operations in these clean-up campaigns to be as lenient with the occupants of the condemned buildings as possible. We have always endeavored to find suitable quarters to which they could move before ordering the destruction of their buildings, and owing to the fact that we were obliged to provide transportation for these families to all parts of the city, we found ourselves hampered in our work through lack of funds with which to pay laborers employed in tearing down buildings, providing trucks for the transportation of family effects, etc. The Common Council voted us $500.00 for this purpose in September, and thus we were enabled to continue in the work."

IV. LOS ANGELES.

The following are brief extracts from the report of the Bureau of Housing Commission of Los Angeles, embodied in the annual report of the Department of Health for the year ended June 30, 1915. The activity of this department along the broader lines of social service, suggestions for new laws, and constructive housing is hopeful. The detailed statement of the work accomplished is also given below.

> "The commissioners held thirty-five regular meetings, in addition to the committee and special meetings.
>
> "It is the purpose of the Commission to use educational methods rather than coercion in carrying out the laws, and the average person complies without demur. When a landlord, agent, or tenant does not comply with the notices for repair, etc., given by the housing inspectors, said landlord, agent, or tenant is cited to appear before the Commission to show cause why they have failed to comply. Eighty-five such citations were served during the year, sixty-five of which were adjusted satisfactorily and twenty-two were recommended for prosecution.
>
> "The Commission divided itself into seven committees with a different chairman for each committee, and much of the detailed work was referred to these committees with power to act.
>
> "The Legislative and Publicity Committee and the president of the Commission spent considerable time and effort in drafting an

entirely new housing code which has not yet been accepted by various committees and interested persons to whom it has been presented.

"It is the constant aim of this Commission to have one good, common-sense housing law enacted in both city and State, instead of having, as at present, housing laws scattered throughout thirteen different ordinances, and a State law which is filled with technicalities.

"The especial work of the Health and Sanitation Committee is to plan for the future; to encourage the erection of good houses for the factory and cannery employèes; to interest the capitalist and philanthropist in the betterment of the foreigner and unfortunate.

"This committee was influential in obtaining $100.00 in donations toward an architectural competition for the best sketch, drawings, and designs of proper houses for the unskilled wage-earners of this city. Cuts were made of the two best sets of drawings and three thousand copies of the drawings and specifications were printed for free distribution. In order to stimulate further interest and public sentiment, stereopticon slides were made of the prize plans, which are intended to be thrown on the screen at future housing and planning lectures.

"The Plans and Permits Committee passed on one thousand eight hundred and seventy-eight applications for permits to occupy house-courts, lodging houses and tenements, and requested that ninety-five applications be canceled and the permits be denied.

"Plans which failed to pass the routine inspection of the office for approval, were referred to this committee for consideration. All plans presented to this committee which could not be brought up to a certain standard were not approved, and consequently hundreds of dark, windowless, and poorly-ventilated rooms have not been erected, and this action has secured the important work of preventing wrong construction, which is the particular aim of this committee.

"The Social Service Committee, which has practically existed since the formation of the Housing Commission, eight and a half years ago, has been influential in bringing relief to emergency cases found by the inspectors on their regular tours of investigation. The committee arranged with the superintendent of the County Charities to accept the report of our investigators as sufficient for furnishing immediate relief. Later, the case reported is investigated by the County Charities' investigator."

(a) Statement of Work (July 1, 1914-June 30, 1915).

	Items	Totals
Total number of inspections		15,189
House-courts	4,404	
Hotels	147	
Lodging houses	4,604	
Tenements	3,426	
Others	2,608	
Total number of notices given		6,559
Verbal	2,506	
Written	3,967	
Garbage and rubbish notices posted	86	
Total number nuisances abated		6,893
Animals and fowls removed	304	
Ashes, garbage and rubbish removed	886	
Bedding cleaned	779	
Carpets cleaned	1,212	
Curtains cleaned	260	
Garbage cans cleaned	158	
Housekeeping abated in tenements and lodging houses	226	
Mattresses condemned	26	
Obstruction from fire escapes	44	
Obstruction from plumbing	181	
Overcrowding abated	162	
Rooms vacated	1,322	
Water-closet bowls cleaned	356	
Windows and transoms cleaned	602	
Others	375	
Total number improvements obtained		23,218
Air shafts cleaned, painted	36	
Alcove curtains removed	217	
Ash, garbage and rubbish cans provided	327	
Basements and cellars cleaned	92	
Bedrooms enlarged to 1,000 cubic feet	32	
Bathtubs new and repaired	92	
Ceilings and walls new and repaired	2,372	
Ceiling and walls cleaned, painted, etc.	9,085	
Chimneys new and repaired	90	
Drains provided in yards	37	
Faucets new and repaired	94	
Flooring new and repaired	274	
Floors cleaned, painted, etc.	3,775	
Fire escapes painted	50	
Gas heaters new and repaired	36	
Gas heaters ventilated	250	
Gutters new and repaired	48	
Halls and stairs cleaned, etc.	182	
Hoppers new and repaired	119	
Janitors provided	2	
Ladders provided	8	
Lights provided	113	
Oilcloth removed	185	
Privy vaults new	27	
Plumbing pipes repaired	719	
Manure boxes new and repaired	25	
Porches new and repaired	61	
Roofs new and repaired	180	
Scuttles new and repaired	1	
Sinks new and repaired	737	
Skylights new and repaired	59	
Steps new and repaired	79	
Unused plumbing fixtures sealed	19	
Urinals new and repaired	33	
Ventilators under floors provided	64	
Washbasins new and repaired	152	
Washtubs new and repaired	45	
Water-closets new and repaired	694	
Water-closets and bathrooms ventilated	260	
Windows new and repaired	846	

(a) Statement of Work (July 1, 1914-June 30, 1915)—Continued.

	Items	Totals
Windows and doors screened	83	
Wooden enclosures removed from sinks	565	
Water supply installed	46	
Yards cleaned	403	
Yards filled in and graded	106	
Others	787	
Total number of applications received		1,878
House-courts	466	
Hotels	22	
Lodging houses	744	
Tenements	646	
(Note.—These figures do not include the applications pending from the previous year.)		
Total number of applications approved		1,706
House-courts	337	
Hotels	19	
Lodging houses	692	
Tenements	658	
Total number of applications pending		77
House-courts	39	
Hotels	7	
Lodging houses	18	
Tenements	13	
Total number of applications cancelled		95
House-courts	14	
Hotels	2	
Lodging houses	59	
Tenements	20	
Total number placed added to records		667
House-courts	246	
Hotels	8	
Lodging houses	183	
Tenements	230	
House-court plans inspected	459	
House-court plans approved	312	
Complaints received	729	
Cases referred to other departments	724	
Cases filed in police courts	35	
Convictions	20	
Fines	$125	
Social service	906	
Cases referred to charitable and other organizations	427	
Trips to charitable and other organizations	315	
Miscellaneous visits to houses	164	

(b) House-courts.

"Regarding the number of house-court plans approved (312), as given above 246 were approved for the construction of new courts. One hundred and twenty-seven of the 246 courts became house-courts by the alteration of buildings into three habitation places, or by adding two habitations to the existing one-habitation dwelling on the same premises, thereby converting single dwellings into house-courts. This brings out the fact that the rear, front and side yards, which were formerly used by one tenant, are more and more being utilized for rental and for income purposes.

"The 30 per cent to be left unoccupied by structures of any kind on the entire lot without stating where said portion of the court should be left unoccupied is a weakness in the ordinance, and unless that section of the ordinance is changed it will permit lot overcrowding and poor arrangement of the buildings. In some instances a space of six inches has been allowed between buildings, and in others the buildings have been placed so near that the eaves would touch each other, thus preventing a free circulation of air and abundant light and privacy.

"The new courts comprised 465 buildings; 442 one-story; nine, one and one-half story; 14, two-story; 460, frame; five, brick.

"Number of habitations: Three, one-room; 63, two-room; 356, three-room; 199, four-room; 34, five-room; 15, six-room; two, seven-room; eight, eight-room.

"The demand for three and four-room habitations is increasing and the supply for one and two-room habitations diminishing.

"The average cost of construction per habitation for the plans filed is as follows: One-room, $260.00; two-room, $210.00; three-room, $578.00; four-room, $660.00; five-room, $1,265.00; six-room, $2,860.00; seven-room, $2,650.00; eight-room, $2,900.00.

"A recent survey of 1,202 house-courts in this city, made by Dr. E. R. Bogardus, of the University of Southern California, shows that in the house-courts there are 5,934 habitations, comprising 731 one-room habitations, 1,278 two-room habitations, 1,808 three-room habitations, 1,435 four-room habitations, 526 five-room habitations, 135 six-room habitations; 22 unclassified.

"Many of the six and some of the five rooms are occupied by two family groups, hence they really become three or two-room habitations. It will be noted that the most frequent size of habitation is three rooms.

"The rent of same is as follows: One-room, $3.52; two-room, $6.08; three-room, $12.15; four-room, $14.88; five-room, $17.45; six-room, $20.10. The average rent is the highest per room for the three-room habitation, $4.05 per room.

"The population of the 1,202 house-courts was 16,510, thus the house-court population would of itself form a city of no mean size. The population on the basis of the available figures is distributed approximately as follows: Men, 6,490; women, 4,820; boys, 2,640; girls, 2,460.

Nationalities.

"American, 383; Mexican, 298; Italian, 141; Russian, 73; Negro, 68; Jewish, 56; Slavonic, 31; Japanese, 24; Chinese, 24; Greek, 7; others, 87.

Occupations.

"Unskilled, 447; skilled, 213; clerks, 76; merchants, 54; professional, 61."

AN
A-B-C OF HOUSING

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The Commission of Immigration and Housing
of California

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PREFACE.

This pamphlet is intended to serve as a primer on housing. It is in no way a technical treatise on this complex subject, nor is it proposed as an outline for a housing ordinance. The Commission publishes this material for the general public in the hope that many people may become interested in the housing question. A movement for better housing conditions in any community can not succeed unless it has the intelligent approval of the majority of citizens.

Moreover, suggestions are made which will enable an industrious few to survey and study the general housing evils and problems peculiar to any one community. The Commission invites correspondence concerning the subject matter of this pamphlet and, on request, will send a detailed plan of directions for making a complete housing survey of a city or town. Whenever advisable the Commission will send, without cost to a community, a housing expert to conduct such surveys.

COMMISSION OF IMMIGRATION AND
HOUSING OF CALIFORNIA.

J. H. McBride.
Mary S. Gibson.
Edward J. Hanna.
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A. THE SURVEY.

Few, if any, of our cities have housing conditions that are above criticism. And few know just what their housing conditions really are. The intelligent, up-to-date municipality will take stock of its affairs, that it may be in a position to remedy the evils that exist, and to anticipate worse evils that otherwise might appear in the future. This municipal stocktaking is called a survey.

The Commission of Immigration and Housing of California is prepared to assist cities desiring to make such a survey, by suggesting a detailed working plan and offering personal expert service where required.

In any general plan for good housing in a city the first thing to do is to make a survey, devoting special attention to poorer quarters and the homes of aliens. Surveys are best made by men and women investigators working together, and they should be able to speak the language of aliens whose homes they inspect.

After a thorough survey the community should be educated by having photographs made of bad conditions and showing the public what they are, and where they are, and how they can be remedied. It is bad policy to try to hide things. Concealment is ultimately expensive.

B. THE CITY PLAN.*

A carefully made survey will reveal the need of a City Plan, indicating certain changes in the existing lay-out and providing for future growth.

The city should have a plan for streets, parks, playgrounds and buildings. If possible the plan should provide for detached one family houses, with lawn and room for rear garden.

This is the ideal arrangement; but where houses are connecting, as is often necessary for economy, there should, at least, be vacant space in front or in rear or both.

A plan for additions to a city or for making changes in housing in manufacturing centers should provide space for homes of working people.

Laboring people should live near their work. A ride of a laboring man to or from his work of more than fifteen or twenty minutes consumes time and money that he can not afford. If he is in a good location, the nearer he is to his work, the more time he will have for home work and leisure, and in addition save money in transportation.

The kind of homes made possible for laboring people adapted to their needs in price and location may vary with location.

With the possible exception of those living in large cities, each family should have a separate home. The problem is to have detached homes with the conveniences of private bath, good plumbing and lot space at a price that laborers can afford to pay.

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*Chapter 428, Statutes of California, 1915, page 708, provides for the creation of city planning commissions.

Workingmen's homes have been built in Washington City, Philadelphia, and Cincinnati that are sanitary, having a private bath and a basement, for a rental of $7.50, $8.50, $10.50, $12.50 per month. Owing to the high price of land in these cities these buildings are in solid blocks. One day's wage of a workingman should equal one week's rent of house.

In California cheap detached homes could probably be furnished with all conveniences and ample lot space for a rental equally low.

Factories should be so located that prevailing winds will carry smoke and dust away from residences.

Livery stables should not be allowed in a residence district. As horse manure is a favorite breeding place for flies, it should always be screened.

C. HOUSING REGULATIONS.

The City Plan has to do with the general lay-out of a town in regard to zones of residence and industry, playgrounds, parks, schools, etc. Along with this there should be certain housing regulations.

The State of California has laws regulating tenements and lodging houses. As yet, there is no state regulation of single or separate dwellings.

Municipal housing regulations relate to (1) construction or (2) sanitation.

(1) Construction.

Every city should have a building ordinance. It should specify how houses should be constructed, the cubic air space in rooms, the amount of space each building might occupy on a lot, location of fire escapes.

The ordinance should only grant discretionary power to building inspectors or other officers to a very limited extent and this limit should be carefully specified. Discretionary power is dangerous and might defeat the law.

A city building ordinance should specify the minimum height of ceilings, window space or light area, and floor space per person.

Dark, windowless rooms should not be permitted. Every room should have two windows and, if possible, arrangement for cross ventilation.

Tenements for two or more families should have separate entrances. Halls should always be lighted.

Houses should not be allowed on alleys.

Rear tenements should be forbidden.

All residence buildings should be several inches above the ground. The areas for ventilation in foundation should be screened to keep out animals and insects.

(2) Sanitation.

(A) *Sanitary inspection.*

The problem of the care of houses is more a sanitary than a structural one. It is less how a house is built, though this is important, than whether it is clean or dirty, sanitary or insanitary.

A well built house may be unfit to live in; a poorly built and inconveniently arranged house may be a model of cleanliness and healthfulness.

All matters of a sanitary nature in the construction of houses should be referred to the health department. The health department should examine plans of buildings and see that ordinances are complied with.

The health officer should have power to declare buildings unfit for habitation.

When a house is declared unfit to live in it should either be made fit for use or it should be destroyed. Houses abandoned and left standing are a menace.

A health department should not wait for complaints. Inspectors should go out and investigate suspected houses.

There should be some arrangement by which a permanent committee should study and report on housing conditions.

The committee should be representative and have a physician, a lawyer, an architect, a clergyman, a representative of labor, a business man; be made up of natives and foreigners, men and women.

Once a year the committee should go through the poorer parts of the town and inspect conditions.

It would be well for every town and city to have a clearing-house for tenants and also for landlords. Tenants might thereby get reliable information in regard to landlords and the latter learn of desirable tenants.

There is no greater force for sanitary homes among the poor than that of a visiting nurse who will instruct housekeepers in such matters and teach them cleanliness in sympathetic and helpful ways. Such a nurse exercising patience and tact will be welcomed by the poor. A nurse should also be instructed to report neglect of landlords, as tenants fear unpleasant consequences from making complaints.

(B) *Ventilation.*

The size of rooms is less important than facilities for ventilation. A small room well ventilated may be better for two people than a large room poorly ventilated may be for one person.

The vital thing in room ventilation is an arrangement for keeping the air moving. Stagnant air is oppressive, moving air, though not perfectly pure, may be quite comfortable.

One chief danger in any community is overcrowding of the poor, especially in the sleeping quarters. A number of people will sometimes crowd in one room at night to sleep, and in a house where there are several vacant rooms. The only remedy for this is night inspection and, possibly, education of the people themselves.

(C) *Surroundings.*

An important feature of good housing is the immediate surroundings of houses.

Where residence lots are fenced these should be of wire.

A dirty yard, neglected or open garbage cans, stagnant water, slops thrown on the ground, damp places, any of these may impair the advantages of the best arranged home.

A landlord should be required to see that all parts of a building are kept free from dirt and rubbish, that cellars are free from dampness, that walls are painted or calcimined when necessary, that the roof be not allowed to leak and that receptacles for ashes and rubbish be furnished and kept in repair.

Houses occupied by six or more families should have a caretaker who is responsible to the owner.

(D) *Care of alleys.*

Alleys should be paved and curbed.

An ordinance should forbid the throwing of rubbish or garbage into an alley. Unused articles such as boxes, barrels, ashes, broken carts, etc., should not be allowed in alleys.

An ordinance should provide for carts gathering rubbish and garbage at regular intervals.

Rubbish and garbage should be placed in separate receptacles, preferably in galvanized iron cans with tight fitting covers.

In towns and cities where private residences abut upon alleys, open wire fences are better than board fences. A board fence is a screen for all kinds of rubbish and dirt. A wire fence allows for vines, flowers, and shrubbery.

An alley should be as clean as a residence street. Talks should be given in schools on the subject of clean streets and alleys and on the dangers of disease and fires from piles of rubbish.

The most sanitary home may be made insanitary by rubbish and filth in an adjoining alley.

Fires occur from waste paper and rubbish thrown in alleys. Loose pieces of paper are blown about the street where they are picked up at the expense of the city, because of people's carelessness.

(E) *General.*

Homes should be kept free from flies, fleas and bed-bugs. They carry disease.

Mice and rats carry disease. They are dangerous in a home.

Ice and milk are not infrequently infected, either before entering a private home or while in the home. They should be protected from dust and flies.

Ice boxes may be sources of infection. They should be thoroughly cleaned several times each year.

If there is a sewer system in a town, cesspools and privies should be forbidden.

If a town is too small to afford a sewer system, privies should be located where they will not pollute wells. Privy openings should be protected from flies by screens.

The sanitary arrangement of bakeries should be specified in ordinances and inspectors should see to their enforcement.

NOTE.

Any suggestion concerning the land problem in connection with housing has been intentionally omitted in the preceding pages. The Commission fully realizes that the questions of land holding, taxation, valuation, etc., have a most important bearing upon the general housing problem, and particularly upon the problem of housing congestion. But the Commission also realizes that these problems require the deepest study, and does not, at the present time, deem it proper to offer suggestions or recommendations. A thorough investigation is being made concerning the land situation in the State and, in the course of time, the Commission plans to publish its conclusions on this fundamental question.

BRIEF LIST OF BOOKS ON HOUSING AND CITY PLANNING.

United States.

Housing Reform—Veiller, L.
Survey Associates, 105 East Twenty-second street, New York. $1.25. 1910.
Model Tenement House Law—Veiller, L.
Survey Associates, 105 East Twenty-second street, New York. $1.25. 1910.
Model Housing Law—Veiller, L.
Survey Associates, 105 East Twenty-second street, New York. $2.
First Report of the Tenement House Department of the City of New York.
National Housing Association, 105 East Twenty-second street, New York. $2.90, postpaid.
Tenement House Problem—deForest and Veiller, editors.
National Housing Association, 105 East Twenty-second street, New York. 1903. $3. Postpaid, $3.40.
Housing Problems in America.
Proceedings, Vol. I, 1911; Vol. II, 1912; Vol. III, 1913. $2 per vol., postpaid.
National Housing Association pamphlets, 5 and 10 cents each.
The Housing Awakening series in the *Survey*, 1910-11.
Description of housing conditions in typical American cities. 10 cents and 25 cents for magazine numbers. Total, $2.65 for the 13 numbers.
Housing of the Working People—Gould, E. R. L.
Eighth Special Report of the Commissioner of Labor, Washington. 1895. Gratis.
Housing of the Working People in the United States by Employers—Hangar, G. W. W.
Bulletin, Bureau of Labor, No. 54, Washington. 1904. Gratis.
Model Factories and Villages—Meakin, Budgett.
Geo. N. Jacobs & Co., Philadelphia. 1906. $2.
Building and Loan Associations in the United States—Hangar, G. W. W.
Bulletin of the Bureau of Labor, No. 55, Washington, D. C. 1904. Gratis.
Tenement House Inspector—Price, Geo. M., M.D.
A textbook for civil service candidates for the positions of tenement house inspectors and clerks, also for sanitary and building inspectors, etc. Published by The Chief Pub. Co., New York City. 1910. 2d edition. $1.50. (Based on the New York Tenement House Law.)
House Fly: Disease Carrier—Howard, L. O.
Stokes, N. Y. $1.60. 1911.
Beauty for Ashes—Fellows Bacon, Mrs. Albion.
Dodd, Mead & Co., Fourth avenue and Thirtieth street, New York City. $1.50, plus postage.
The Modern City and Its Problems—Howe, Frederic C.
Scribner's. 1915. $1.50.

England.

Housing of the Working Classes Acts, 1890–1909, and Town Planning—Allan, C. E., and Allan, F. G.
Annotated and explained. 3d ed. Pub. by Butterworth, London. 1911. $3, imported.
Handbook to the Housing and Town Planning Act, 1909—Thompson, W.
Pub. by the National Housing Reform Council, 4 Travistock square, London, W. C. 1910. Paper covers 1s., cloth covers 2s.
Public Health and Housing—Sykes, J. J.
P. S. King & Co., London. 5s. net. Imported, $1.50.
Practical Housing—Nettlefold, J. S.
Garden City Press, Letchworth. Cloth bound. 1908. Popular edition with chapter on Housing and Town Planning. Act of 1909–1910. Price, 1s. net, paper; 2s. net, cloth.
Back to Back Houses—Mair, Dr. Darra.
Local Government Board, London. Price, 3d.

Proceedings of the Housing Section, National Conference on the Prevention of Destitution, 1912.
Pub. by P. S. King & Son, Orchard House, Westminster. Price, 2s. 6d.
Housing of the Working Classes, 1855–1912.
London County Council.
Liverpool Town Planning and Housing Exhibition, March, 1914, Transactions.
University Press of Liverpool. Price, $1.83.
Practical Town Planning—Nettlefold, John S.
1s. net.

Garden Cities and Villages.

Garden Cities of Tomorrow—Howard, Ebenezer.
Pub. by Swan, Sonnerschein & Co., Lt., Paternoster square, London. 1912.
Garden Suburbs, Villages and Homes—Vivian, Henry, and others.
Pub. by Garden City Press, Letchworth. Price, 9d., postpaid.
The Pioneer Co-partnership Suburb.
Pub. by Garden City Press, Letchworth. Price, 4d., postpaid.
Other Co-partnership Tenants publications, 6 Bloomsbury square, London, W. C.
The Garden City Movement Up to Date—Culpin, Edwart G.
Pub. by Garden Cities and Town Planning Association. 1913. Price, 35 cents.
Labor and Housing at Port Sunlight—George, W. L.
Alston Rivers, London. 3s. 6d. net.

Germany.

Handbuch des Wohnungswesens und der Wolmungsfrage—Eberstadt, Prof. Dr. Rud.
Pub. by Gustav Fischer, Jena. 1910.
Können die in den heutigen grosstadtischen Wohnverhältnissen liegenden Mangel und Schaden behoben werden?—Weiss, Albert.
Pub. by Carl Heymann, Berlin. 1912.
Tatigkeit der Stadt Ulm D., etc., 1903—Oberburgermeister, Wagner.
Pub. by J. Ebner, Ulm. D.
Improvement of Dwellings, etc.: The Example of Germany—Horsfal, T. C.
University Press, Manchester. 1905. Price, 1s.
Da Arbeiter Wohuhaus—Mackowsky.
Pub. by Ernest Wasmuth, Berlin. Price, $1.25.
Publications of the German Garden City Association.
The monthly magazine *Gartenstadt.* 5 M. per year. General Secretary A. Otto, Schlachtensee, Berlin.
Stadbau.
A monthly magazine. $6 per year. Vol. I. 1904 to date.

Miscellaneous.

Proceedings of the International Housing Congress, London, Vienna, The Hague, etc.
Address O. Velghe, Secretary Permanent Committee, Director General of the Sanitary Board, Brussels, Belgium.
Proceedings of the National City Planning Conference, 1909 to date.
$2 per vol. Address Flavel Shurtleff, Secretary, 19 Congress street, Boston, Mass.
Width and Arrangement of Streets—Robinson, C. M.
McGraw. 1911. $2.
The Survey.
105 East Twenty-second street, New York City.
The American City.
93 Nassau street, New York City.
Principles of City Land Values—Hurd, Richard M.
3d edition. 1911. Pub. by the *Record and Guide*, 119 West Fortieth street, New York City.
The City Plan—National City Planning Conference.
19 Congress street, Boston, Mass. $5.

The Commission invites correspondence concerning the subject matter of this pamphlet.

On request, the Commission will send a detailed plan of directions for making a housing survey of a city or town.

Whenever advisable the Commission will send a housing expert, without cost to the community, to conduct housing surveys.

A PLAN

FOR A

HOUSING SURVEY

Commission of Immigration and Housing
of California

Underwood Building, 525 Market Street
San Francisco, Cal.

JANUARY, 1916

A PLAN FOR A HOUSING SURVEY.

INTRODUCTION.

The plan here presented for making a survey of housing conditions in a city or town does not include the survey of conditions bearing upon a city plan. City planning is a technical subject, and preliminary surveys looking toward constructive city planning work in any city should be undertaken by an expert city planner employed by a city planning commission. In fact the first task that will confront any city planning commission created under the provisions of the state city planning law, chapter 428 of the Statutes of 1915, will be a survey of existing conditions and this Commission can not presume to furnish a plan of survey which would be applicable to any city or town—especially when the plan would be furnished to an expert or experts who should be more familiar with the literature and theories of city planning than is this Commission.

The plan here submitted is, therefore, limited strictly to a survey of existing housing conditions with reference principally to the construction and sanitation of dwelling houses.

THE PLAN.

I.

EDUCATION.

The first essential thing is that the group or organization interested in making a survey should get a clear idea of what housing means, and what those working for better housing are trying to accomplish. There are many bad housing conditions which are not quite so dangerous and serious as they might appear to the beginner. Moreover, the beginner in housing is apt to jump at conclusions and seize upon any suggested remedy when emotionally moved by insanitary and bad housing conditions. In this connection Mr. John Ihlder of the National Housing Association says: ''For instance, it very often happens that those who find in their own community dilapidated hovels and shacks are prone to advocate the building of model tenements. Yet the coming of these model tenements would in the long run work the city far more injury than the continuance of the present insanitary hovels and shacks which, after all, may be wiped out with comparatively small effort once the community has made up its mind to do so. The tenements, on the other hand, once established remain practically forever.''

The first suggestion, therefore, is that those who plan to undertake a housing survey should begin by carefully studying some of the housing literature listed in the bibliography of the ''A. B. C. of Housing,'' published by this Commission and which will be sent free on request.

II.

ORGANIZATION.

When those who have undertaken the work are fairly familiar with the fundamental problems of housing, the next step is the formation of an organization for a survey of existing housing conditions. There are very few communities in the State in which any citizens or even the city councilmen or the health officer have any accurate conception of the existing housing and sanitary conditions. It is, therefore, not surprising that there are so few well-defined plans for constructive housing and sanitary work in California cities.

(A) The people who undertake to conduct or stand as sponsors for a survey should be gathered together in some sort of an organization for the purpose. This organization should preferably have a large representative membership, so that greater influence can be brought to bear in arousing public sentiment and support and in passing ordinances.

(B) The general management of the housing survey should be entrusted to a rather small executive committee. This committee should be made absolutely responsible for the prompt and proper conduct of the work.

(C) The town or city, or the part thereof that is to be surveyed, should be divided into districts, with a member of the executive committee in charge of the work in each district.

(D) The executive committee should carefully select a group of volunteers or paid workers who have completed the course of study prescribed above, and who are pledged to carry through the work conscientiously and promptly.

(E) Some one person, preferably one with experience in housing work, should be put in charge of the workers who are to do the actual inspection. This person should train the workers in a uniform method of inspection and in the making of reports. Furthermore, this person, after the work has begun, should make frequent tours in the scattered districts to check up the work of the inspectors.

(F) The districts above mentioned should in turn be split up into divisions and two field workers should be assigned to inspection in each division. Much more can be accomplished by two people working together than by working separately. Especially is this true in making measurements and in collecting general statistics. The workers should be absolutely restricted or limited to the division assigned them.

(G) When the working force has been organized nothing should be done in the way of inspection until the workers are made familiar with all the state laws and local ordinances affecting the sanitation, maintenance, and general construction of houses. The workers must know the legal definitions of a tenement house, a hotel, a lodging house, and single and multiple dwellings other than tenements. The two state laws dealing with housing conditions which must be carefully studied are the State Tenement House Act, Chapter 572, Statutes of 1915, and the Hotel and Lodging House Act, Chapter 695, Statutes of 1913. Inspections made by workers familiar with state and local laws will be much more profitable because then the violations of these laws can be reported and a distinction made where insanitary conditions are discovered which are not covered by law.

There should be careful individual study of the laws and this study should be supplemented by lectures and general open discussions of the various laws and the provisions thereof.

III.

INSPECTION.

When the field workers are thus broadly informed concerning the general problems of housing and concerning the housing laws, the careful, methodical work of inspection should begin.

(A) It is of primary importance that some sort of housing card or blank be used for the recording of the facts discovered. General statements that such and such houses are "in bad condition" or "insanitary" carry no weight and they are not convincing. Furthermore, they are not comparable, and they are not susceptible of statistical treatment. Appended to this plan are the forms used by the State Commission of Immigration and Housing in reporting inspections. These forms do not cover all the sections of the state housing laws nor do they cover the provisions of local ordinances. They do cover, however, the most important violations of laws and the worst insanitary conditions. They can be easily printed on cardboard five by eight inches in size.

(B) The field workers should be carefully instructed how to fill out the cards used. It would probably be well for the entire group to inspect one house together, or separately, and fill out cards thereon by way of experiment. Roughly, any cards or reports which are used should gather definite information concerning the following conditions:

1. Percentage of lot occupied by building.
2. Size of yards and courts; distances between detached houses.
3. Condition of streets and alleys as to repair and cleanliness.
4. General condition of yards.
5. Light and ventilation of rooms and halls.
6. State of repair of walls, ceilings and floors.
7. Size of rooms and overcrowding of rooms.
8. Use of cellars and basements for living purposes.
9. Drainage of cellar, yard, etc.
10. Use of surface wells and relation to privy vaults.
11. Provisions for sewer and running water.
12. Plumbing conditions—closed or open.
13. Condition of water-closets or privies.
14. Garbage disposal and receptacles.
15. Stables or any animals on premises.
16. Number and general condition of fire escapes.

(C) These reports above mentioned should be made out for every house (whether the outer appearance be "good" or "bad") in the districts where intensive surveys are to be made. Several square blocks, at least, should be selected for such intensive surveys, and they should include the homes of aliens and the wage earners who are most open to exploitation by greedy landlords. Several blocks in the "better" districts should be surveyed for comparison.

(D) In addition to these intensive surveys, a survey of the general housing conditions should be made by one small group, or by the head worker mentioned above. This survey would, necessarily, be superficial, and touch generally upon cleanliness of streets, alley conditions, cesspools and privy vaults, garbage conditions, general appearance, etc. In this general survey should be included, where possible, statistics concerning the number of tenement houses, hotels, and lodging houses, etc., in the city or town. These can be obtained from the city records, the building inspector, health department, insurance companies, etc.

IV.

PUBLICITY AND EDUCATION.

When the inspectors have covered all the ground possible the information and statistics which have been gathered must be compiled and put before the public in the most convincing and impressive ways. Above all else the conclusions and tables of figures must be absolutely accurate; exaggerations or figures open to the slightest suspicion must be ruthlessly excluded. To quote from George Thomas Palmer, with reference to civic improvement: "Our evidence must be complete, and we must prove every count in our indictment. Our story must be consistent and absolutely truthful. A last year's bird's-nest is of enormous utility compared with an exaggerating or lying reformer, and the oversensitive and hypercritical will be on the alert to find inaccuracies in our evidence. In no American city, so far as I know, is it necessary to stretch the truth or frame our charges in intemperate words to prove the necessity for civic improvement."

(A) The following are brief suggestions of the best ways in which to compile the facts: (1) Simple, comparative tables of figures, showing the number of totally dark rooms, and such other insanitary conditions. (2) Graphic charts, which better visualize the totals of figures. (3) A block map of the city, containing plats of the blocks surveyed with the insanitary houses indicated by a uniform coloring. (4) Separate maps of the individual blocks surveyed, indicating by different colors the total number of each of the ten or twelve worst sanitary violations in the block. (5) Chart, showing by comparative pyramids the number of violations of existing laws or ordinances, and the number of violations of sanitary rules which *should be* laws. (6) Charts or maps, showing the compartive death rates of children and adults in the districts surveyed, and their relation to housing. (7) And, most important of all, panels of photographs of the actual conditions, for photographs carry more conviction than even figures and maps. No expense should be spared in employing *professional* photographers to accompany the inspectors occasionally to get the clearest possible photographs of interiors and exteriors.

(B) The material so compiled should then be given the widest publicity and used in every conceivable way to educate the community and make it appreciate the need of improvement. (1) The wide distribution of a brief and not wordy report containing a large number of photographs and all the tables and charts, is probably the first step. (2) Wide and persistent publicity should be given to the report in the local press in spite of the opposition of ''boosters'' clubs—for ''concealment is ultimately expensive.'' (3) An attractive exhibit on panels should be installed in a centrally located public hall or vacant store—this to be supplemented by a small ''feeder'' or advertising exhibits in shop windows. (4) Public meetings with lectures should be held in connection with the exhibit, and speakers should give lectures, illustrated by lantern slides, before every local club or organization. (5) Influential groups of citizens, particularly newspaper editors, legislators, councilmen, labor leaders, business men, and club women, should be taken to see some of the typical housing conditions.

V.

LEGISLATION.

Before an anticlimax is reached in this campaign of publicity or education, there must be a careful directing of the forces of the movement to accomplish a definite object—the passage of remedial legislation. (Note: In some rare instances it may be found that no new housing regulations are required—that the only difficulty lies in securing the *enforcement* of existing regulations. This will be a rare situation among California cities or towns, however.) The drafting of housing laws is a technical and difficult undertaking. Wherever possible an expert should be employed. At any rate the laws or ordinances of other states and cities should be carefully studied in order to derive all possible benefit from the experience of other communities, and such laws modified to apply to the slightly different conditions that may be found. It may be possible to set ''impractical'' or ''foolishly high'' standards, but this danger is not so serious as the possibility of setting standards which are too low. The standards must not be considered merely with reference to existing conditions; they should be fixed to prevent the growth of evil housing conditions or problems in the future. All the public sentiment and support which may have been aroused by the exposure of existing conditions will be needed to force through adequate legislation.

VI.

LAW ENFORCEMENT.

The last step in the program in the field of housing covered by this survey plan is to secure the enforcement of housing laws—old and new. To quote from Lawrence Veiller's "Housing Programme"—"Having secured legislation, many housing reformers think they have accomplished what they sought to do, whereas, in fact, they have just begun. Heretofore they have been preparing the soil, and this is seedtime, not harvest. If they want to get the fruits of their efforts they must be prepared to stay at the work for many years to come. How often have we seen important laws completely nullified through lack of enforcement. Housing reform in this respect differs somewhat from other great social causes, inasmuch as there is always an interested opposition ready to take advantage of the slightest relaxation on the part of the community. Eternal vigilance is indeed the price of liberty in this field." The laws "are sure to be not properly enforced unless the people responsible for them do stand by to prod and aid the public officials."

(A) The organization which conducts the survey should therefore become permanent and keep regularly in touch with the housing situation.

(B) Aid should be given the public officials charged with the enforcement of the housing laws in the following ways: (1) Organize sympathetic, moral, and even financial support to back the officials in enforcing the laws. (2) Attempt to reach and educate recalcitrant builders and owners so as to secure their co-operation rather than their opposition. (3) Organize, support, and secure adequate staffs of inspectors and adequate appropriations for all departments charged with enforcing the laws. (4) Semiannual, general inspections by committees to check up and report violations and to observe the efforts used to enforce the laws.

VII.

CONCLUSION.

The plan outlined above deals largely with amelioration of conditions. Some organizations may be interested in going on into the more constructive fields of housing, such as community housing, garden cities, city planning, etc. The Commisison would be glad to correspond with organizations or individuals regarding these subjects.

APPENDIX.

The following are reproductions of the Tenement, Hotel and Lodging, and Family Dwelling cards used by the Commission of Immigration and Housing. They can be reproduced on cardboard 5 by 8 inches in size. It is recommended that the back of the cards be left blank for additional remarks by the inspectors.

TOWN.......... ADDRESS.......... OWNER.......... RENT..........

Lot

Size..........Size of yard..........ft.

Cleanliness of yard..........Animals..........

Outbuildings—No..........Use..........

Condition of stable..........

Street

How paved..........

Clean..........

Sewer (yes—no)

City water (yes—no)

House

Material..........No. stories..........

No. apartments.......... No. vacant.......... **Front or rear**..........

Distance between houses..........ft.

Distance of lower floor from ground..........ft.

Rear porch: open—closed—use..........

Stairs—condition..........

Sanitation

	Material	Where situated	How ventilated	How lighted	Cleanliness	Enclosed
Bath						
Toilet						
Sink						
Wash tub						

Toilet used by how many families..........How many persons.......... Condition of toilet compartment..........

Garbage can: material.......... Covered (yes—no) When emptied..........

Repair

Condition of { Walls.......... Floors..........

{ Plumbing.......... Roof..........

Basement or cellar

Use.......... Size.......... Ventilation..........

Material of floors..........Walls.......... Cleanliness..........

Rooms

No..........No. without windows..........No. with windows opening on hall or other room..........Ventilation..........

Congestion

Total No. persons in apartment	Adults	Children under 14 yrs.	Boarders Lodgers	No. bedrooms occupied	Occupation head of house	Income	Nationality

Size of bedroom	Cu. ft.	No. beds	No. persons	No. windows	Open on what	Cleanliness
						Is kitchen used for sleeping purposes?

Remarks on back of card.

NAME OF INVESTIGATOR.......... DATE..........

HOUSING CARD. Commission of Immigration and Housing of California

CITY____

BLOCK No.____ HOUSE No.____ STREET____ OWNER____ DATE OF BUILDING____

		Lot	Yard	L. L. Outer Courts	L. L. Inner Courts	Inner Courts	Vent Shafts
Lot— **Inner or Corner**	**Size of**	ft. x	x	x	x	x	x
	Drainage of						
Per cent of Lot Occupied	Size of Air Intakes of						

Rear Building (yes—no) Material____ Use____ Distance between front and rear building (ft.)____

Buildings

Material____ No. Stories____ No. Apartments____ Front____ Rear____

No. **Entrances**____ Width (ft.)____ Width of Public Stairs (ft.) Front____ Rear____

No. **Fire Escapes**____ Where situated____ Obstructions____

Rooms

Rooms: No.____ No. without windows____ No. with windows opening— on hall____ on other room____

Bedrooms: No. opening on courts less than 20 sq. ft. area____ No. opening on covered porches____

Cellar or Basement

Access from street or yard____ Height of ceiling (ft.)____ Size of windows____ft. x____ft.____

Material of floor____ Walls____ Use____ Cleanliness____

Sanitation

	No.	Material	Enclosed	Where situated	Window (size) ____ft. x____ft.	Opening on what	Material of floor
Sinks							
Baths							
Toilets							

Are any toilets in basement?____ Toilet floor painted____ Cleanliness____

Stationery Tubs: No.____ Material____ Where situated____

Is there door or window access at bottom of shafts or innner courts?____ Size____

Repair

Condition of { Walls____ Floors____	Plumbing____ Roof____	Are inner and lot line courts painted? ____

Remarks on back of card.

NAME OF INVESTIGATOR____ DATE____

TENEMENT HOUSE INSPECTION SCHEDULE. Commission of Immigration and Housing of California

CITY____________________

BLOCK No.________HOUSE No.________STREET________OWNER________DATE OF BUILDING________

No. STORIES________No. APARTMENTS________FRONT________REAR________VACANT________No. OF ROOMS________

	Ap't No.	Size of bedrooms ________ft. x ________ft.	Area—cu. ft.	No. beds	No. persons	Windows open on what	Size of court or light well	How lighted
Bedroom Congestion								

	Ap't No.	Rent	No. rooms	Total No. of persons in apartment	Adults	Children under 14	No. of lodgers	Occupation of head of house	Nationality	Cleanliness
Occupants										

Garbage Can: Material________Covered (yes—no)________How often emptied________Used by how many families________

Kind of animals or poultry kept on premises________Distance from tenement________

Possible improvements and remarks on back of card.

NAME OF INVESTIGATOR________DATE________

TENEMENT HOUSE INSPECTION SCHEDULE

Commission of Immigration and Housing of California

	Size (________ft. x________ft.)	Air Space (Cu. ft.)	Size of Windows (________ft. x________ft.)	Open on What	How Lighted	Beds (No.)	Sleeping Capacity of Room
Bedrooms							

Floor Covering: Carpet—Painted—Matting—Bare Boards. Cleanliness ____

Walls: Papered—Painted—Plastered—Lime-Washed—Bare Boards. Cleanliness ____

Beds and Bedding

Material of Beds____________________________ of Mattresses______________________________ How often fumigated?____________________

No. on Bed	How Often Cleaned	Condition	How Often Fumigated?
Blankets			
Quilts			
Sheets			
Pillows			

Towels: Individual—Roller. No. of Roller Towels used per day____

Lodgers

No. per night__________________________No. Regular Lodgers__________________________ Are Women taken in?__________________________

Finance

Prices	Per Night							Monthly Income
Per night__________Per week__________	No. beds at	10_____	15_____	20_____	25_____	35_____	50_____	July____________ January ____________

Expenditures: Rent $___________ Laundry $___________Service $_____________Light $_____________Fuel $_____________Misc. $_____________

Is there a reading room?________________How equipped?____

Remarks on back of card.

NAME OF INVESTIGATOR____DATE______________________________

LODGING HOUSE SCHEDULE (1)

Commission of Immigration and Housing of California

NAME________________________ADDRESS________________________DATE OF BUILDING________________

Lot—
Inner
Corner
Street to
Street

	Lot	Yard	L. L. Outer Courts	L. L. Inner Courts	Inner Courts	Vent Shafts	Per Cent of Lot Occupied
Size	ft. x	x	x	x	x	x	x

Other buildings on lot________________________ Use________________________

Building Construction

*Material*________________No. *Stories*________________No. *Entrances*________________Width of Entrance (ft.)____________

No. *Fire Escapes*____________Where situated________________________Obstructions____________________

*Total rooms*________________
Inside rooms________________
Outside rooms________________

Types and Number of Each { Stalls________________________ / Ordinary Rooms________________________ / Dormitories________________________

Ventilation { No. Windows in house__________ / No. Skylights__________ / No. Vent Shafts__________

Halls and Stairs

	No.	Width (ft.)	How Lighted	How Ventilated	Cleanliness
Hallways					
Stairways					

Basement or Cellar

Size (________ft. x________ft.) *Material* { Floors________________ / Walls________________ *Damp-proof* { Yes______ / No______

Windows { No.________________________ / Size________________________ Other Ventilation________________________

Sanitation

Plumbing
Old }
New }

	No.	Material	Where Situated	How Ventilated	Material of Floor	Cleanliness
Baths						
Toilets						
Urinals						
Wash sinks						

*Hot and Cold Water*________________No. rooms having *Washbowls*________________Kind of bowls____________________

Cuspidors: No.__________Kind__________ Where placed____________________. Is *Common Cup* used?__________ No. Cups__________

Garbage Can: Material____________Size across top__________Covered (yes—no) Where situated____________ How often emptied____________

Remarks____(Over)

LODGING HOUSE SCHEDULE (2)

THE COMMISSION INVITES CORRESPONDENCE CONCERNING THE DETAILS OF THIS PLAN, AND WILL WELCOME ANY SUGGESTIONS.

IF A COMMUNITY NEEDS ASSISTANCE IN ORGANIZING AND STARTING A SURVEY, THE COMMISSION WILL LEND THE SERVICES OF AN EXPERT WHENEVER PRACTICABLE.

COMMISSION OF IMMIGRATION AND HOUSING
OF CALIFORNIA.

525 Market Street, San Francisco.

V.

CONSTRUCTIVE HOUSING.

(A) INTRODUCTION.

As was stated in last year's report, the Commission, in November, 1914, sent a housing and city planning expert throughout the east to collect material which would demonstrate the advantages of good housing, and also emphasize the need for timely and constructive city plans for housing as well as for streets and parks. The photographs, statistics, and other material thus collected have been incorporated in an exhibit of some forty panels. In order to make clear the connection with California problems, photographs and statistical tables showing local housing conditions are included in this exhibit. The two panels reproduced on pages 311 and 315, illustrate the general dual nature of the exhibit—exposing bad conditions and suggesting remedies.

This exhibit, together with the labor camp sanitation exhibit, was displayed in San Francisco, Oakland, Los Angeles, and Sacramento for considerable periods during the past year. Portions of the exhibit have also been used in connection with conferences and lectures, particularly during the convention of the League of California Municipalities and the State City Planning Conference in September, 1915. The exhibit has always attracted wide attention, and thousands of people in the various cities have attended the lectures on its meaning and significance. Lantern slides of the most important material collected have also been made and used extensively in illustrating talks before various organizations. Moreover, besides this general educational value, the exhibit proved to be of great value during the three weeks it was displayed at the State capital, in convincing the legislature of the need of more and better housing laws.

It is planned to take the exhibit, in turn, to each city where the Commission makes a housing survey and campaign for better conditions. It should prove effective in energizing city officials to enforce all housing laws, and also it should convince the municipalities of the advisability of creating city planning commissions under the permissive law of 1915.

A complete and detailed report on the whole subject of better housing was made by the expert who assembled this exhibit. Only the following short digest of the report is here given, for much of it is of a technical nature and the full report would be of use and interest only to city planning commissions, co-operative housing associations, etc. The full report is on file in the office of the Commission and it is hoped that any persons or organizations who might be interested in actually carrying out any of the suggestions will make use of it.

(B) DIGEST SPECIAL REPORT.

(I) Housing and City Planning.

Examination of the efforts being made in this country and in Europe to solve the housing problem, shows that such work must be taken up along two separate lines—by restrictive remedial measures and by constructive preventive measures. This report is largely limited to a consideration of the latter measures.

While many bad housing conditions already exist in California, the State is yet new and rapid growth seems certain. It is imperative, therefore, to plan ahead and to insure, in some measure, an ample supply of wholesome homes for future residents. This involves "city planning" in the broadest sense of the term. As was stated by Thomas Adams, housing and town planning advisor to the Conservation Commission of Canada, in "Conservation of Life," January, 1915:

> "Preventive measures in connection with housing evils may all be included under the term 'town planning.' As popularly understood in Canada and the United States, town planning does not appear to have much in connection with housing, but this is due to an erroneous impression of what town planning is. That may be because the term itself suggests to the mind the mere embellishment of the external features of the town or city, such as the architectural qualities of its buildings or the efficiency of its transportation, and does not convey any idea of the extent to which it enters into the fundamental aspects of city life and growth. Or, it may be because the idea of what is meant by the term has been gained from the kind of town planning that has been chiefly prevalent in some countries, such as Germany and the United States, which has concerned itself for the most part with the external and grandiose in city development.
>
> "But whatever the reason, it is an error to assume that town planning concerns itself solely with any one thing connected with improvement of a town either as regards its external appearance,

---

*The complete report, entitled "Better Housing," is on file in the office of the Commission, where it can be examined by those desiring technical or more detailed information. The Commission also invites correspondence concerning details of the report.

> its sanitation, or its convenience. In the sense in which it is used in Great Britain, and in the sense in which it has lately come to be understood in America, it covers everything connected with the city and concerns itself with everything that has to do with the health and well-being of the citizens. In that broad aspect it is really more important than the housing problem, or the sanitary problem, or the transportation problem, since it includes all these and more, and provides the only satisfactory method of studying and dealing with the inter-relation of these problems with one another."

Under a permissive law enacted in 1915 (Chapter 428, Statutes of 1915), California cities can create city planning commissions. Such commissions could do much to establish a minimum standard of housing or living and demonstrate the advantage to both owner and tenant.

Example of deteriorated district—"hampered industries and dejected housing." Old residences overcrowded and insanitary, in industrial center in Macy Street district, Los Angeles.

For instance, in San Francisco there is a wooden tenement, six stories high in the rear, which is a menace to the health and safety of the occupants, and a temptation to exploiters of the poor who might attempt to duplicate it. This tenement houses over 90 families at an average rent of $3.00 per room per month. Contrast with this the model group houses built by the Woodlawn Company in Wilmington, Delaware, where four to eight-room dwellings rent for from $10.00 to $16.50 per month—or an average of about $2.50 per room per month. These houses are built of brick, two stories high, and have all sanitary conveniences. While the land occupied by these houses is somewhat cheaper than that on which the San Francisco tenement is built, yet similar buildings could undoubtedly be built in San Francisco to produce a reasonable rate of interest—and perhaps better net returns, because there would be such a demand for houses of this type that they would never be vacant, while a certain number of apartments seem to be always vacant in crowded, insanitary tenements.

In England, group houses of four and seven rooms are being built to rent for from $6.00 to $12.00. Recent estimates of architects show that such houses could not be built as cheaply in California—in fact, they would cost nearly twice as much. But in few California cities it is possible to secure seven rooms at even $15.00 or $20.00 per month, except in the cheapest kind of tenements or in deteriorated districts where the houses are in bad repair and the surroundings insanitary. Certainly it should be possible to build houses here, as good as those in England, to rent profitably at from $8.00 to $20.00 per month. It should be made somebody's business in each city to collect the facts and to show owners and builders how to make returns on such investments, either in group housing or other schemes.

(II) Land Congestion.

One factor of the housing problem that could be easily dealt with in California's younger communities is land congestion. One of the chief causes of congestion of population is congestion of factories and shops. Workers must live near their shops, particularly if hours are long and wages low. This was proved by a recent study of 10,000 workers in New York. There is already the same tendency in the larger California cities, and certainly some planning ahead is required to prevent the growth of unregulated districts with little or no yard or other spaces. San Francisco has a splendid opportunity to study out some method of relieving the land and housing congestion on Telegraph Hill. Most of the tenements in that district are built on ten-year land leases which expire in 1916-17 and 18, and undoubtedly the co-operation of the land owners could be secured in carrying out a practical scheme for relieving congestion without reducing rents—and experience in other cities has shown that such a result could be obtained. And cities other than San Francisco should give heed to such planning ahead, for California is coming to be less and less an agricultural state, and congestion in cities must be guarded against. The census of 1910 shows 56 per cent of the State's population concentrated in cities of over 5,000, and in 1880 only 40 per cent were so concentrated; in 1910, 37.3 per cent of the total population was in cities of over 100,000; in 1880 the figure was 27 per cent.

In England congested slum and tenement districts became such a serious menace to public health in many cities that it was necessary to buy the property, destroy it, and re-house the people of these districts.

In the past few years the larger cities have spent enormous sums in such work—London, $9,471,935.00; Liverpool, $4,903,690.00; Leeds, $2,500,000.00, etc. These huge expenditures were the result of failure to plan ahead. This should be an object lesson to California cities. A little forethought, and the planning of preventive measures, such as industrial and residential zone ordinances, will save much in the end.

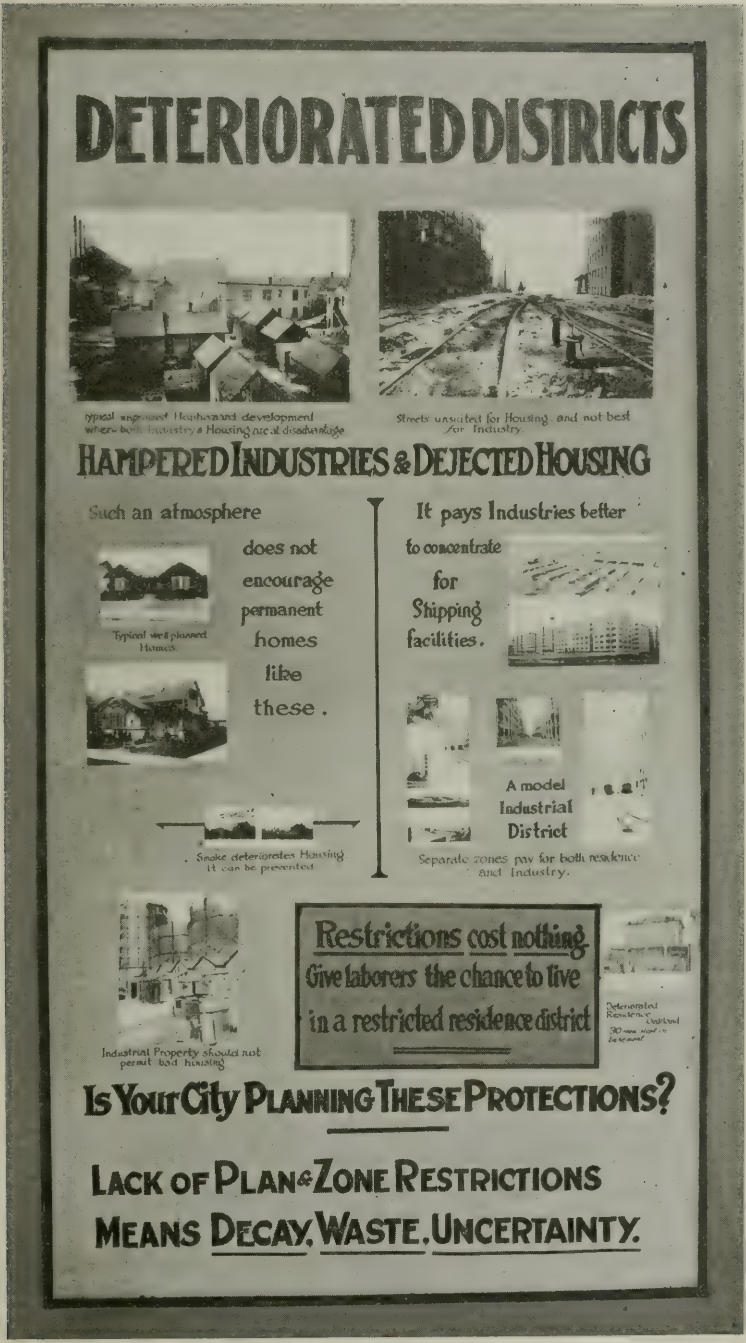
Moreover, it pays industries to concentrate in industrial districts, where shipping facilities are better and where homes will not interfere with expansion—such as the obtaining of rights of way for spur tracks. Unguided, haphazard development, with industries and housing thrown in each other's way, puts each at a disadvantage. As has been said by Dr. Carol Aronovici in ''Town Development'': ''Industry, business and home life may flourish in the same community if they are distributed according to an intelligent community plan. Without a plan, moral, sanitary and economic slums are created.''

(III) Providing Better Houses.

As conditions are today only the well-to-do can buy homes in restricted residence districts. In fact, the poor man has little choice in renting or buying a home in California cities today—he must take what he can get. No organized effort has been made to provide better houses for those of little means who wish to either rent or own homes. City and county officials, and private organizations, are always actively working to induce new industries to locate in their cities, but no effort is made to carefully plan and provide housing for the workers who come with new industries. Yet the health and stability of the labor supply for these industries and factories is of first importance—and both health and efficiency depend on proper housing conditions. Many American and European cities have realized that it is at least as important to encourage better housing as it is to encourage new industries and business.

Rural credit legislation, or provisions for lending the State's credit to farmers, is being favorably discussed in America today. It would seem that there is as much justification for extending credit to city families, so that they can build wholesome homes. Such a credit system has been in operation for some time in New Zealand under the ''Advance to Workers Act.'' The following is a brief report concerning the methods followed and the results obtained:

> ''The intent of the Advances to Workers Act, passed in 1906, is to extend the advance of public money to workers desirous of providing themselves with homes, to be secured by a first mortgage of the premises, which may be either freehold or leasehold. A worker is defined by the law as a person employed in either manual or clerical work who is not in receipt of an income of more than $1,000.00 per annum at the time of making application for the loan, and is not at the time owner of any other land, besides that which is offered as security. The person applying may be either a man or woman.



DETERIORATED DISTRICTS

typical unguided Haphazard development where both Industry & Housing are at disadvantage

Streets unsuited for Housing, and not best for Industry.

HAMPERED INDUSTRIES & DEJECTED HOUSING

Such an atmosphere does not encourage permanent homes like these.

Typical well planned Homes.

Smoke deteriorates Housing. It can be prevented.

It pays Industries better to concentrate for Shipping facilities.

A model Industrial District

Separate zones pay for both residence and Industry.

Industrial Property should not permit bad housing

Restrictions cost nothing. Give laborers the chance to live in a restricted residence district

Deteriorated Residence Oakland 30 [illegible]

Is Your City Planning These Protections?

LACK OF PLAN & ZONE RESTRICTIONS MEANS DECAY, WASTE, UNCERTAINTY.

Reproduction of one of some forty panels compiled by the Commission and used as an educational exhibit throughout the State to show the evils of bad housing and the value of good housing.

"The loan may be used either for the purchase of land on which a house has already been built, or for the purpose of building on land already the property of the person applying. The largest amount that can be borrowed from the public fund by one applicant is fixed at $2,250.00, a sum sufficient, under ordinary circumstances, to pay for the erection of a cottage home of six rooms, well and substantially built.

"In case the loan is required for the erection of a house, the money is to be advanced by installments as the building progresses; the house must be inspected by a government officer and a certificate secured from him before the balance of the loan can be obtained. The sum advanced shall not exceed the value of the dwelling house to be erected or three-fourths of the value of the security in the case of freehold land, or three-fourths of the lessee's interest in the lease in the case of leasehold land. The advance is secured by a mortgage over the whole property.

"The interest is payable half-yearly, together with an installment of the principal, which by this means is fully repaid in 36½ years, when the mortgage is released. Valuation fees and the cost of preparing and registering the necessary deeds are fixed by regulation on an exceedingly low scale and are payable by the borrower.

"Loans are granted only on the installment system. Interest is charged at the rate of 5 per cent, reducible to 4½ per cent, provided payment is made not later than fourteen days after due. No procuration fee, commission or charge for obtaining a loan is paid to any person. Persons desiring an advance make written application on a form obtained from any postmaster. The postmaster also supplies an envelope in which the application may be forwarded, and gives the applicant any explanation which may be required respecting the filling in of the form. The department supplies applicants with *house plans and specifications free of charge.* Eighteen different types of homes containing from two to eight rooms are covered by the plans. They are drawn with the view to getting the maximum amount of room and convenience for a reasonable price. The cost of the buildings varies according to the size from $600.00 to $3,200.00.

"The applications received for loans during the year ending March 31, 1912, numbered 2,223, the aggregate amount required being $3,753,860.00. The total number of loans from the inception of the system was 7,674, and the aggregate amount authorized, $10,803,325.00. Of these, 686 grants, amounting to $791,450.00, were declined, so that the net authorizations number 6,988 for an aggregate amount of $10,011,875.00."

(From First Annual Report Massachusetts Homestead Commission, 1913.)

In European countries schemes for furnishing more indirect governmental aid have been in operation for years. German cities, for example, assist co-operative building associations by subscribing for shares, by taking over association mortgages, by tax exemptions, and by selling city land for homes at the lowest possible price. English municipalities have also aided in building garden cities and they have torn down insanitary houses in slum districts and built model homes.

In the United States there have been only scattered efforts by private companies to provide better housing. Unfortunately, much of the work has had to do with the erection of model tenements, or apartment houses such as the Phipps tenements in New York and the Riverside Buildings in Brooklyn. Undoubtedly, some tenements are better than others and it is well to have these good examples if tenements must be, but the whole tenement idea seems wrong. It would seem that efforts to provide better housing should be directed toward encouraging or securing better small houses in groups. Several private American companies are now developing this idea, especially some factories in housing their workers, and the copartnership suburb recently started at North Billerica, Massachusetts, is an experiment that should be carefully studied. as an object lesson. But the greatest difficulty, so far, with American schemes for better housing is that they have lacked the copartnership or co-operative features of the European methods. Americans show great aptitude for co-operation in business and they should be able to apply the same principles to group housing or garden city development. A study of all available data leads to the conclusions stated in the following extract from the First Annual Report of the Massachusetts Homestead Commission:

> ''The statistical data collected by the Commission tend to show that nowhere in the world has the problem of providing homes for workingmen been solved by the private initiative of landowners and builders alone; governmental aid or mutual operations have been necessary. * * * The imperfect success of present methods in the United States is largely due to the lack of incentive to attain ideal conditions. Under the 'landlord system,' so called, the interest of the original owner is in financial returns and speculative profits, whereas the dweller is interested primarily in social returns, that is, in the utility of the property as a home for his family.
>
> ''Speculative profits must be eliminated, and money must be available at a fixed rate, commensurate with the risk involved. The only certain way to accomplish this end is to limit the dividend—the first fundamental of improved housing finance.
>
> ''The second requirement is wholesale operation. Collective action will permit great economies.''

Briefly, the copartnership, garden city plan involves the following principles:

The association or society owns land and houses, selling 99 year leaseholds of homes built on garden city principles.

Every house, yard, street, park and playground must be planned first.

The number of houses per acre is limited.

The garden city must be forever surrounded by an agricultural or park belt.

The garden city locates the factory, as well as the workers' homes, where there is fresh country air, cheaper land and greater efficiency.

The terms are twenty or more annual payments, like rent. If the tenant has to move, his equity is not confiscated but retained by him in the form of salable bonds.

Repairs and upkeep of all dwelling houses are provided for by the association, thus making mutual responsibility for the welfare of all.

Profits from increase in land values become dividends to tenants, but profits are limited. (If there is not a copartnership, but a company owns and rents the homes, the profits to the company are limited—usually to 5 per cent or 6 per cent.)

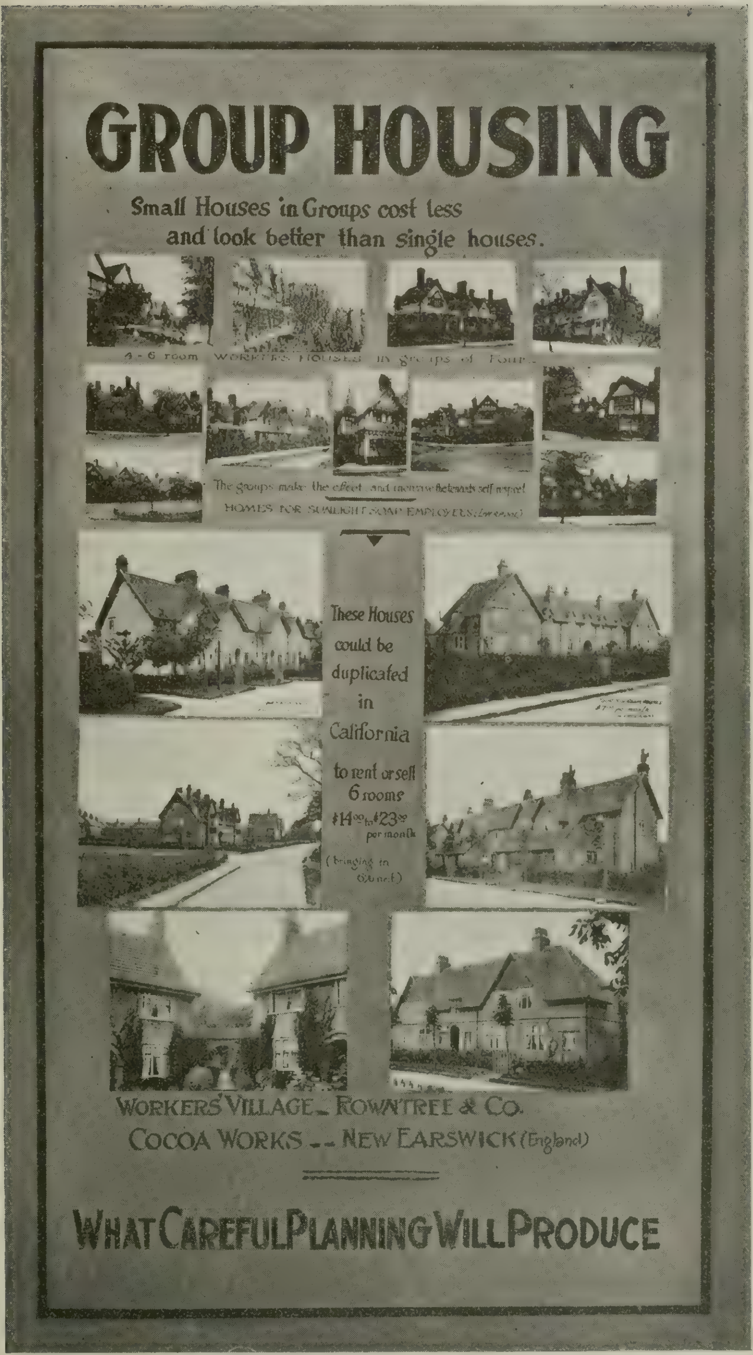
Such a copartnership housing plan is a long step in the right direction. There would seem to be no reason why it should not work out well in California.

(C) THE NEW HOMESTEAD LAW IN MASSACHUSETTS.

Since the above report was written, and only a few weeks ago, the State of Massachusetts adopted the so-called Homestead Amendment to the Constitution. The amendment makes it possible for the State to go into the home building business, in co-operation with cities and towns, in much the same manner as foreign governments and cities. It was carried, as a referendum measure, by an overwhelming majority, and the Homestead Commission, which will administer the measure, should have general and sympathetic public support in inaugurating constructive plans for providing working people with wholesome, inexpensive homes on easy terms. The amendment, as finally approved by the legislature, is as follows:

> "The general court shall have power to authorize cities and towns to take land, and to hold, improve, subdivide, build upon and sell the same, for the purpose of relieving congestion of population and providing homes for citizens; *provided, however,* that this amendment shall not be deemed to authorize the sale of such land or buildings at less than the cost thereof."

The Homestead Commission has announced that it intends to go slowly in applying the theory of state aid in housing to an individualistic community. It is planned to build the homes in groups, following garden city plans, and to provide agricultural instruction for the resident families—thus encouraging or making possible, eventually, a back-to-the-land movement. Likewise, it is the intention to keep the city planning commissions through a voluntary state organization, in close touch with all this work.


GROUP HOUSING
Small Houses in Groups cost less and look better than single houses.
4-6 room WORKERS HOUSES in groups of Four.
The groups make the effect and increase the tenants self respect
HOMES FOR SUNLIGHT SOAP EMPLOYEES (England)
These Houses could be duplicated in California
to rent or sell 6 rooms $14.00 to $23.00 per month
(bringing in 6% net)
WORKERS' VILLAGE – ROWNTREE & CO.
COCOA WORKS – NEW EARSWICK (England)
WHAT CAREFUL PLANNING WILL PRODUCE

Reproduction of one of the panels of the Commission's housing exhibit. Some fifteen of the panels contain constructive suggestions, such as those on this panel, with regard to providing and planning better houses and homes for the future.

The Commission of Immigration and Housing is convinced that Massachusetts is working along the right lines in constructive housing, with its compulsory city planning commissions and with this new state aid in providing housing. Certainly the experiments which are being carried on there are deserving of very careful observation, and it is to be hoped that the time is not far distant when California will be so aroused to the need for preventive housing measures that it will follow Massachusetts in this work.

VI.

DISTRIBUTION OF IMMIGRANTS.

The most common suggestion for a general solution of whatever problems may be connected with the large immigration to the United States is the oft repeated proposal to "distribute the immigrants on the land." The proponents of this "back-to-the-land" movement believe that not only would housing and economic congestion in cities be thus prevented, but that the immigrants would increase their own prosperity and that of the nation if they devoted themselves exclusively to agriculture. However, the many people who would thus settle the problem of immigrant assimilation seldom do more than pronounce the word "distribution." No effective means for bringing about this distribution have yet been found, and the fact that many immigrants have little capital and are not fitted for agricultural pursuits does not seem to be considered.

The Commission would not completely reject this proposed solution, but it is convinced that any distribution which is brought about by artificial methods of transporting all immigrants from docks to farms would work more harm than good. Not all immigrants are farmers, and many of them, like many native-born Americans, could never be developed into successful farmers. Furthermore, there is the difficulty that those who have agricultural abilities or tendencies have insufficient capital to purchase or develop land. Therefore, any organized effort to place immigrants on land must be carefully worked out and it must provide some machinery for proper selection or discrimination, and also direct financial aid. The system of rural credits in some of the Australian states provides such discriminatory financial aid, and the recently created Rural Credits and Land Colonization Commission may be able to devise some form of rural credits for California which can be used effectively in encouraging the "back-to-the-land" movement among both the foreign and native-born who are adapted to agriculture.

Until some such carefully devised plan can be put into operation, the Commission believes that little can be done in the way of land colonization schemes, but that all efforts should be directed toward improving rural conditions and furnishing general information to all those who are naturally attracted to the country. Indirectly, much of the work of this Commission has tended to make rural life more attractive, especially the effort to secure better sanitation and housing in small towns, on farms, and even in labor camps; and the educational program, outlined in chapter III, will have considerable effect in this connection. Moreover, in two ways, the Commission has very directly attacked this problem, first, by prosecuting land fraud cases and securing the passage of the act regulating the advertising of land, discussed in detail on page 392; and, second, by making an arrangement to furnish information to prospective purchasers concerning agricultural land.

This latter arrangement has just been made with the Division of Agricultural Extension of the University of California. The land experts of the latter department will not only furnish general information, but will also make special reports on particular tracts of land. On the following page is a copy of a placard describing the exact nature of the plan. This placard will be printed in several languages and scattered throughout the State. It is hoped to reach the majority of prospective immigrant purchasers in this way and thus prevent the perpetration of frauds in the sale of lands, instead of instigating prosecutions after frauds have been perpetrated. The hundreds of complaints by purchasers of land, which have been handled by the complaint bureau, convinced the Commission that the majority of purchasers of land are sadly in need of expert advice. Even many trained farmers do not seem to be able to judge the soil or general agricultural value of land, except by actual experience, and certainly the immigrants who are not familiar with California conditions need such advice or assistance. It is felt, therefore, that this scheme has great possibilities, and next year the Commission hopes to report considerable progress in this field.

INFORMATION FOR IMMIGRANTS REGARDING FARM LANDS.

Immigrants who are thinking of buying farm lands should call upon or write to the California State Commission of Immigration and Housing for free information and advice regarding land. The Commission is a department of the state government created to protect immigrants from fraud and exploitation.

1. The Commission, co-operating with the Division of Agricultural Extension of the State University, will furnish, without charge, general information regarding agricultural lands; and,

2. It will also make an investigation, and free report, to any immigrant concerning any particular tract of land which he may have visited and the purchase of which he is contemplating. This report will include a careful study of the land involved, both from the point of view of its agricultural possibilities, and from the point of view of its location as regards marketing possibilites. If an immigrant also states his previous experience, his financial condition, and answers freely other questions put to him, this report will also give specific advice as to the wisdom of taking up the proposed land. Before any immigrant buys or makes any payment on a piece of land he should have a free report on it from

THE STATE COMMISSION OF IMMIGRATION AND HOUSING,
525 Market Street, San Francisco.

The Commission's interpreters speak and write all languages.

VII.

UNEMPLOYMENT.*

During the past year the Commission has not done as much directly in connection with the problem of unemployment as it did during the year of 1914. In 1914, the Governor expressly requested the Commission to conduct investigations into the causes of unemployment and to make a report on possible solutions of the problem; moreover, the United States Commission on Industrial Relations furnished funds for this Commission to make a study and report during that year on this problem in California. Several investigators were, therefore, detailed to this work, and a report was published in December, 1914. Since that time the appropriation has not allowed of any special or extensive investigations in this field, especially in view of the fact that the Social Insurance and Rural Credits commissions, created in 1915, will undoubtedly make studies and reports which will cover the important phases of the problem.

However, much of the work of the complaint bureau, of the labor camp inspection bureau, and of the housing department, has had to do with various angles of the unemployment question, and the data thus collected have been carefully studied in carrying out the clause of the organic act which directs the Commission to "devise and carry out such suitable methods as will tend to prevent or relieve congestion and obviate unemployment." Tables I and XVII, pages 346 and 391, group II, for example, furnish information concerning the "turn over" of migratory labor camp workers, and the proportion of skilled to unskilled labor, which is instructive. (A discussion of these tables will be found on pages 27 and 37.) The rapid and wasteful "turn over" of labor thus discovered is a convincing argument for the continuation and development of the free state employment bureau and the labor camp sanitation work, as a means of making the employment of such workers less irregular—for much of this shifting and periodical unemployment is caused by the fee-splitting of private employment offices and by the dissatisfaction of workers with insanitary living conditions. Material such as this, gathered incidentally, has enabled the Commission to make certain recommendations regarding the unemployment problem. These are given under section A, page 321, of this chapter.

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*A separate and comprehensive report on unemployment was published by the Commission on December 9, 1914. Only a few copies are left, but the Commission will be glad to lend these free on request.

With reference to the ever-present corollary of the unemployment problem—the alleviation of suffering and want—the Commission has done more direct and active work. During the past winter, at the Governor's request, an effort was made to arouse the communities to a sense of responsibility in furnishing relief for the destitute unemployed, and the adoption of a uniform plan of relief work was urged by the Commission. A separate report of the work done was made to the Governor on June 25, 1915. Copies of this report, entitled, "Report on Relief of Destitute Unemployed, 1914–1915," will be mailed free on request. The Governor again requested the Commission to undertake this work for the winter of 1915–1916. In section C of this chapter, page 327, there is a brief report of the work done up to date in this field.

(A) RECOMMENDATIONS.

The Commission feels that the general problems of assimilating immigrants and the problem of unemployment or employment are so closely interwoven that it is justified in renewing certain recommendation and making new ones regarding the unemployment problem. It it a regrettable fact that interest in the unemployment problem fluctuates with the general prosperity of business. Experience has proved that at regular intervals the problem of rather general unemployment recurs and that there always exists a problem of unemployment for a few, as well as the question of how to handle the ever-present "unemployables," yet these problems receive consideration only when conditions become acute and a climax is reached. There seems to be little or no planning ahead or preparation during the periods when such work and study could be carried on free from the stress and pressure caused by immediate necessity for action of some sort. At the time of the writing of this report the unemployment problem is much less acute than at the same time last year, and, as a result, the general public, and even the officials charged with some responsibility in such matters, seem to have lost interest in developing and perfecting plans for handling the present unemployed and the many more that may be with us in some future year—even next year. The Commission would, therefore, urge a continued interest in and study of this problem until such time as some machinery or plan may be developed which will always be available to handle this ever recurring problem, and to this end the following recommendations are submitted:

(I) Housing.

As was stated in the report on unemployment submitted by the Commission on December 9, 1914, ''Sickness is a common cause of unemployment—and the seat of sickness is most often found in the home or place of residence.'' It is essential, therefore, that the construction and sanitation of all dwelling places be regulated by law, and the Commission renews its recommendation, made in the report mentioned above, that the state housing laws be broadened to include all family dwellings as well as tenements, and hotels, and lodging houses. The need for such a change in the housing laws is fully discussed elsewhere in this report. (See page 198.)

(II) Educational and Vocational Guidance.

To again quote from the unemployment report mentioned above:

> ''There is nothing that contributes more to the helplessness of an able-bodied immigrant laborer, than ignorance of the language of the country in which he seeks work. In California, we are not meeting the educational needs of the alien who is being enticed to us in increasing numbers. A large proportion of foreign-born in this State is unable to speak the English language. By stimulation a large percentage of the non-English speaking people could be taught our language and so put upon a self-respecting and self-protecting basis.''
>
> ''The temporary Commission on Immigration in Massachusetts found 280,000 illiterates in their state of whom only 80,000 were receiving instruction. That Commission recommended that children from fourteen to seventeen, and all on work certificates, be compelled to attend school one half day until able to read and write; that children from seventeen to twenty-one be compelled to attend evening school until literate; that all possible short cuts be made to teach English to adults; that no city should be obliged to bear the full expense of educating this shifting population, but that the state should bear one-half of all such expenses.''

Therefore, the Commission recommends renewed activity on the part of educational authorities and the women's clubs in organizing instruction for the adult non-English speaking immigrants and the illiterates in the State.

Furthermore, in the field of education, the Commission would again suggest that the State Board of Education, and all local education boards, continue to study the question of vocational guidance and training in the schools with the object in view of reducing for the future the number of ill-adapted workers and unemployables.

(III) Unemployment Insurance.

Unemployment or social insurance is again suggested especially for the migratory or seasonal workers. Although the Commission last year recommended merely that some existing department of state be designated to investigate this subject and submit a definite plan of insurance, the legislature of 1915 created a special commission to do this work. It is to be hoped that this issue will be definitely faced and settled by the next legislature.

(IV) Unemployables and Vagrants.

Students of the subject seem now to be generally agreed that the unemployables should be segregated among the groups of unemployed and that they should receive different or special treatment. The Commission again recommends that some existing commission or board—perhaps the State Board of Charities and Corrections—be charged with the carrying out of some plan for the handling of the problem of the unemployable and the vagrant. The Commission, therefore, reiterates its belief "that the unemployable are a proper charge upon the State, and that if private charity is to assist in their care, the State, at least, should guide and control such private enterprise."

The native-born unemployable certainly have as just a claim upon the state as is generally conceded to the mentally defective, and the indigent, and helpless old and feeble. As for the unemployable among our foreign-born population we cannot deny them equal consideration because they were all regularly and legally admitted to our shores under our own laws, rules and regulations. In fact, the federal government practically certified to their fitness upon arrival as immigrants.

(V) Regularizing Industries.

The suggestion concerning the regularization of work in agriculture and industries generally is again offered. Experiments have demonstrated that where employers have made some attempt to regularize their work, not only has unemployment been lessened, but the efficiency of the plants has increased. Employers, particularly those in agriculture, require a program and guidance in this matter. The Commission recommends that the recently created Rural Credits and Land Colonization Commission, co-operating with the agricultural department of the state university, give this question careful consideration and present the farmers of the State with a definite plan or program. The labor exchanges now operating under the Bureau of Labor Statistics, could also make some useful studies and suggestions to employers in other industries. Again, some other department of the state government, to be selected by the Governor, should be charged with the duty of reporting upon the possibility of reserving certain public works for the winter months and providing emergency public work during these months of depression.

(VI) Improvement of Rural Conditions.

With regard to the all important connection between unemployment and the rural or land situation, the Commission reiterates its conception of the case, as published in the unemployment report already mentioned, and add, perhaps, somewhat to the previous suggestions:

> "In these days we hear much talk about 'back to the land' and 'forward to the land.' The proponents of these movements show us with alarm the exhibit from the census presenting the facts that during the decade 1900–1910, while our rural population increased by 34.5 per cent, the population of towns of 2,500 or more, increased 81.4 per cent, or nearly two and one-half times as rapidly. During this same decade, the number of farms increased 21.6 per cent against an increase of 60.1 per cent in the population; the total farm acreage, however, decreased. Perhaps there is some good ground for their alarm. Perhaps a different situation might prove a relief in this problem of unemployment. The relative unattractiveness of the land is shown particularly in the case of white foreign-born. Though 24.2 per cent of our population in 1910, they formed 28.1 per cent of those living in towns and only 20.5 per cent of our rural population; and this in spite of the fact that most of our immigrants come from rural districts in Europe.
>
> "There seems to be no one who would take the case against those who advocate making easier and more attractive the approach to the land. The farm is the natural outlet for our overcrowded cities. It is out of the rural districts that we must hope to get the backbone of our citizenry. Almost all proposed unemployment solutions that pretend to thoroughness look to the land for relief."

The amendment by the last legislature of the Penal Code regarding misrepresentation in advertising and selling land, drafted by the Commission and discussed elsewhere in this report, will do much to protect prospective land purchasers from exploitation and fraud. Another agency for improvement in this direction is to be found in the arrangement made by the Commission and the Division of Agricultural Extension of the State University, described in detail in another chapter, for supplying prospective settlers with definite information regarding the value of land, approaches to market, and the like.

These measures, however, are largely ameliorative, and it is to be hoped that some definite progress will be made by the State in the more fundamental matters of marketing and rural credits. The subject of rural credits has been so long and generally discussed that it is to be hoped that the Commission recently created to report on the subject at the next legislature will be prepared to submit a definite and workable system of rural credits.

It is also to be hoped that the new State Marketing Commission will work out some solution of the difficult problem of marketing the State's agricultural products. The Commission reaffirms its belief in the principle of the proposed national marketing commission discussed in the unemployment report of December 9, 1914, and expresses the hope that the plans of the State Marketing Commission will fit in with this proposed national scheme.

(B) THE LAND SITUATION.

Few will take issue with the contention that California should comfortably support many, many times her present population. On the other hand it must be conceded that there have been times during the past few years when it seemed as if California was unable to support even her present limited population. That this paradoxical state of affairs does exist is in itself conclusive evidence of a weak spot in our social structure.

The explanation seems to rest in the facts that on the one hand growth of population depends upon easy access to the land; whereas, on the other hand, the prospective purchaser finds land either obtainable only at excessive prices, or withheld altogether from the market by those who refuse to sell in the hope that the future will bring them a much higher price. To this increased value, these latter contribute nothing but mere abstinence. Land withheld from sale is practically non-existent; thus the available supply is limited, and consequently prices on the land offered for sale are artificially and unnaturally forced up.

Idle and unimproved lands seem to constitute one of the safest and most profitable investments. And, unfortunately for the unemployed, the investment in land does not need the assistance of labor or require the payment of wages, nor does it compel owners of wealth to bid against each other for labor. Wealth may thus be invested and large gains realized from it by merely waiting, without its owners paying out one dollar in wages or contributing in the slightest degree to the success of any wealth-producing enterprise, while every improvement in the arts and sciences and in social relations, as well as increase of population, adds to its value. By this means we foster unemployment, yet it is considered legitimate business to purchase land for the avowed purpose of preventing capital and labor from being employed upon it until enormous sums can be extracted for this privilege.

This deplorable situation was recently splendidly summarized as follows:

> ''California wants immigrants—with money enough, earned somewhere else, to buy our land of us, at a higher price than we paid for it.

> "In other words, California wants customers. We are looking, not for people or development, but for mercantile profit in a commercial transaction. And we have the goods to sell, too; the mercantile bargain is a good one, on both sides.
>
> "Is this too cynical a view? If you think so, just try the experiment of cross-examining anybody engaged in promoting immigration, and see whether it is human beings he is looking for, or check books.
>
> "It is a humiliating confession, and we shall not be really civilized so long as it remains true. What we really need is human beings, to work, to transform the latent resources of the State to active wealth, for their own good and ours. California is all right and the workers are all right. If, somehow, they cannot be got together, the fault is ours. We are not organized right; and we might as well confess it."

In brief, the evidence seems to show that the men and women of California who are building up the State and creating its wealth are tolerating a system which encourages rather than prevents holding and speculating in idle land.

Those who have made particular study of the problems of unemployment and immigration realize that one of the most natural outlets, and one of the most logical, is in the direction of releasing to small owners the land now held in large parcels. A recent study of California's assessment rolls reveals the following striking examples of existing conditions:

In Siskiyou County the Central Pacific Railroad Company was assessed for 664,830 acres of land, being approximately 36 per cent of all land assessed in that county.

In San Bernardino County the Southern Pacific Land Company was assessed for 642,246 acres.

Kern County had, according to the California Blue Book, 2,793,605 acres with an assessed valuation. The assessment rolls showed that nearly one-half of that vast acreage was assessed to four concerns, namely, the Southern Pacific Land Company, the Kern County Land Company, R. F. Elliott (Trustee, Tejon Ranch), and Miller & Lux.

The total California holdings of Miller & Lux approximate 700,000 acres. In Merced County alone 245,000 acres were assessed against this corporation.

There is no evidence to show that large land holdings are confined wholly to California. Competent authorities have estimated that the total gifts to the public, *i. e.*, national land grants to railways, have aggregated more than 215,000,000 acres. There does seem to be ample evidence, however, that today the large landholders find it to their advantage "to hold on" to the vast acreage of unimproved lands in their possession.

That it would be to the great advantage of our State to break up these large holdings, there can be no doubt. Just what are the best methods to this end, the Commission is in some doubt. Therefore, an investigation of the land situation within this State is under way; and it is the hope of the Commission that it may be able to offer some definite suggestions before many months have passed.

Possibly some legislation could be devised that would directly break up the large holdings. There are those who contend that a revision of our methods of taxation would serve that end. To transform the latent resources of the State, they say, we must shift the tax burden from improvements on land, such as houses, trees, etc., and from personal property, such as horses, cows, merchandise and other products of labor, to land values.

Those who look to taxation as the remedy point to the fact that the California assessment rolls show that our tax laws enable the owners of idle, unimproved land to escape with only a nominal, and in many instances a positively ridiculous, low tax. For example, 22,061 acres of Central Pacific lands in Yuba County paid an average tax of 6 cents per acre; 69,008 acres assessed to the same concern in Tehama County paid 7½ cents per acre; 16,000 acres owned by the Agoure interests in Ventura County paid an average of 8½ cents per acre; 13,732 acres assessed to the Southern Pacific Land Company in Tulare County paid an average of 4½ cents per acre.

So, though good citizens may question the advisability of adopting radical means to pry the land monopolists loose from their holdings, all must agree that the present method of taxation will not do it. However, whether the remedy is in taxation or in some other method, or in a combination of both, the Commission is not yet prepared to say.

(C) RELIEF OF DESTITUTE UNEMPLOYED.*

The governor requested the Commission in September, 1915, to again undertake the task of organizing the cities and counties in some uniform plan of relief for destitute unemployed. This allowed more time than during the previous year for mapping out a program, and for presenting it to the various communities before any unemployment crises was reached. Preliminary surveys were made by the labor camp and housing inspectors to ascertain how much unemployment might be expected during the winter, and many local officials were consulted on this matter. These investigations and conferences indicated that there was a prevailing opinion that the State might again face a severe problem of winter unemployment, although some businesses were rapidly improving and furnishing employment to more workers.

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*A separate report on the work done by the Commission in this field during the winter of 1914-1915 was published on June 25, 1915. This report will be mailed free on request.

Therefore, during October and November, news letters were sent to papers throughout the country, warning all people that there was little or no employment to be had in California, and, particularly warning the indolent tramps, who are wont to seek California's warm climate during the winter, that food and lodging could be obtained only in return for hard labor. These warnings were printed in hundreds of newspapers in eastern states, and must have warded off both many bona fide unemployed and unemployables.

Furthermore, on September 30th, communications were sent to the boards of supervisors of every county, and to the councils of the forty-three largest cities and towns, urging them to give early consideration to the problem of dealing with any unemployment problem that might arise during the winter. It was pointed out that no money need be spent in devising and organizing plans for relief of the unemployed, and that nothing could be lost by being prepared in advance. Several cities were also visited by representatives of the Commission, and conferences held with various officials. As a result of this campaign eighteen cities communicated further with the Commission and made arrangements for carrying out the uniform plan of relief, with minor modifications. Seven counties also responded to this call.

The following extracts from these communications show the main points emphasized by the Commission:

> "As you will probably recall, this Commission last year acted as a clearing house for California counties and municipalities in formulating a uniform plan for the relief of destitute unemployed. Under separate cover, we are mailing you a copy of our report showing what was accomplished. At the governor's request, we have again undertaken this work for the coming winter. Last year we were not detailed to do this work until a late date, but this year we wish to bring the matter of preparing for this problem to your attention at this early date so as to avoid the waste of hurry and confusion.
>
> "If your particular community is so fortunate as to have no serious problem in this connection during the winter, then you need not spend the money so set aside, but can divert it to other purposes. But certainly you will lose nothing by being prepared in advance.
>
> "The Commission has no new plans to present, but would again suggest the plan which is incorporated in our report of last year's work. Three points we emphasize:
>
> "(1) All counties and cities should agree not to 'pass on' their destitute unemployed. This only makes a vicious circle and shifts burdens unjustly.
>
> "(2) That the departments of the county and city governments should plan to do during the winter months, when the unemployment problem is most serious, whatever regular or emergency work is possible.

> "(3) The county and municipal governments should co-operate in making appropriations for the maintenance of temporary lodging houses where meals and beds can be furnished unemployed, but only in return for work rendered, when there is no public work available for which wages can be paid.
>
> "It is our suggestion that you should immediately map out what public work can be done in the winter months, and also set aside or appropriate a definite sum to be used for maintaining a temporary lodging house for the single unemployed men and for furnishing assistance to married unemployed men and unemployed women."

As an additional effort to persuade people to give thought to the matter of being prepared, the Commission tried to reach employers by sending communications to the chambers of commerce in these same forty-three cities. It is hoped to thus arouse interest and to encourage employers to attack the problem of the ultimate or industrial solution of unemployment, as a result of this consideration of means for alleviating the suffering and want of the unemployed. This effort met with some response in ten cities. The following quotations from the communication are printed in order to show the line of thought suggested:

> "We would urge your organization, as representing the employers and business men of the community, to give some attention to the problem of unemployment, not abstractly, but as applied to concrete businesses of your members. After all, the problem of unemployment is in truth a problem of employment and the employers can do much to preserve a better balance in the labor market. We would ask that you take up in open meetings the discussion of the possibilities of regularizing the work in the various industries, and that committees work out some very definite plans and suggestions to urge upon your individual members who are employers of labor.
>
> "In this connection we might make two or three general suggestions which would indicate what we have in mind.
>
> "1. Employers might plan to do work during the winter months that ordinarily they would do in the spring and early summer months.
>
> "2. In some businesses employers might scatter their work through the entire year with a steady working force rather than running with a small force most of the time and doing rush work at certain periods.
>
> "3. During the slack winter months employers might work their employees at fractional time rather than discharging a large number and retaining only a few.
>
> "4. Big employers with big plants might, during slack seasons, clean up their factories, or buildings, paint them, etc.

> "Many big employers in eastern cities have tried all and some of these things with considerable success. Working upon these suggestions, other methods of regularizing work can undoubtedly be discovered. It is not only a humanitarian matter, but it is a matter of efficiency and dollars, to keep people regularly employed."

Short surveys made just before this report goes to press seem to show that the unemployment problem is less severe this winter than it has been for several years, consequently there may not be so much need for relief work. It is possible that the efforts of so many communities to handle their own problems, and their refusal to pass on or "float" the unemployed, has had some effect in discouraging the formation of unemployed "armies" or other organized means of attracting general attention to the problem. However, it is not aimed to prophesy on such matters, and a special report on the winter's work will probably be made in May or June.

VIII

LEGISLATION.

In accordance with the directions contained in section 8 of the organic act, the Commission drafted and submitted to the legislature in 1915 proposed laws aimed to promote the general welfare of the State, particularly with reference to immigration problems. This remedial legislation was suggested not as a panacea, but as a possible means for improving certain conditions. The following brief digests of these laws, as enacted by the legislature, are printed here for easy reference in connection with the other chapters of this report:

(A) LABOR CAMP SANITATION.

The labor camp sanitation act of 1913 was strengthened and amended in the following particulars:

(I) Mess houses, kitchens, and dining tents must be kept in a sanitary state, and all openings must be screened;

(II) Adequate and convenient toilet facilities must be provided—latrines, or privies, must have pits of certain depth, lime or ashes must be used as disinfectants, and all openings must be screened;

(III) Garbage and rubbish must be deposited in sanitary, covered receptacles which must be emptied daily, and the contents disposed of in a sanitary method;

(IV) The Commission of Immigration and Housing of California shall enforce the act, and have the power to inspect all camps to secure compliance with the above new provisions, and also the sections dealing with adequate sleeping facilities, general sanitation, cleanliness, etc.

(B) AMENDMENT OF TENEMENT HOUSE ACT.

Section 1 of the Tenement House Act was amended so as to give the Commission of Immigration and Housing authority to enforce the provisions of the act dealing with the sanitation and proper maintenance of tenement houses. The Commission must first notify the local departments of health of violations and can enforce the law only after the local officials have neglected to do so for a period of thirty days.

(C) HOME TEACHERS.

Boards of school trustees of any district, or city boards of education, are granted power, under a special law, to employ ''home teachers''; the salaries of such teachers to be paid from the city or district special school funds. The duties of such teachers are briefly outlined as follows: Instruction of children and adults in matters relating to school attendance, instruction of adults in the English language, civics, sanitation, and general household economics. (See page 150 of this report for law in full.)

(D) FALSE LAND ADVERTISEMENTS.

A new section was added to the State Penal Code, making it a misdemeanor to publish or disseminate any untrue or misleading statement concerning the location, extent, or any other quality or attribute of real estate located in this State or elsewhere; provided that publishers of newspapers or job printers, shall not be liable for such publications unless they have an interest in the real estate so advertised.

(E) RESTRICTIONS ON DOCKS WHERE IMMIGRANTS ARE LANDED.

(I) This new law gives the Commission of Immigration and Housing authority to fence off restricted areas on docks or lands owned by the State, on which immigrants are landed after having been passed and admitted by the federal immigration authorities. At times when immigrants are being landed only persons having permits or licenses from the Commission will be permitted to enter these restricted areas to meet or talk with the immigrants.

(II) Permission is also given the Commission to make similar co-operative arrangements with private dock owners.

(III) Violation of the act is made a misdemeanor.

(F) SUBPŒNAING WITNESSES.

Section 10 of the act creating the Commission of Immigration and Housing was amended so as to give the Commission authority to subpœna witnesses for hearings concerning complaints of immigrants.

(G) SUPPORT OF ILLEGITIMATE CHILDREN.

Section 270 of the Penal Code was amended so as to make the parent of an illegitimate child criminally liable for failure to furnish necessary food, clothing, shelter or medical attendance for his child. (This section, before amended, had been held, in a case prosecuted by the Commission, to apply only to legitimate children.)

STAFF.

January 1, 1916.

G. L. Bell, Attorney and Executive Officer - - San Francisco
W. W. Harris, Complaint Investigator - - - San Francisco
E. A. Brown, Camp Inspector - - - - San Francisco
J. R. Murison, Camp Inspector - - - - San Francisco
R. G. Wagenet, Camp Inspector - - - - San Francisco
J. V. Thompson, General Investigator - - - San Francisco
Caroline Schleef, Housing Inspector - - - San Francisco
L. T. Mott, Bookkeeper and Clerk - - - - San Francisco
O. H. Biernath, Interpreter - - - - - San Francisco
Lilas Ball, Stenographer - - - - - - San Francisco
F. J. Cunningham, Investigator and Branch Manager - Sacramento
Leda Pellegrini, Stenographer - - - - - Sacramento
Ethel Richardson, Investigator and Branch Manager - Los Angeles

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The following persons have been employed during the period covered by this report, but are not now in the service of the Commission:

Augusto Bissiri, Frederick W. Ely, Clarence Gamble, George L. Melton, Frederick C. Mills, Frank L. Mulgrew, Luther Parker, J. J. Rosenthal, and John L. Simpson.

GROUP I.

TABLE I. Working Force and Residents at Date of Inspection in 107 Labor Camps, With Distribution According to Sex and Skill.

(Tables cover only camps inspected between November 1, 1914, and June 30, 1915.)

	Beet	Per-centage	Berry	Per-centage	Con-struction	Per-centage	Fruit	Per-centage	Grape	Per-centage	Highway and grading	Per-centage	Hop	Per-centage
Working force or present capacity	171	3.6	------	------	1,020	21.6	------	------	------	------	1,943	41.3	------	------
Residents	188	3.8	------	------	1,063	21.7	------	------	------	------	1,973	39.9	------	------
Men	167	88.6	------	------	1,017	95.7	------	------	------	------	1,855	94.0	------	------
Women*	12	6.0	------	------	33	3.1	------	------	------	------	59	3.0	------	------
Children†	9	5.4	------	------	13	1.2	------	------	------	------	59	3.0	------	------
Totals on three preceding subjects	188	100.0	------	------	1,063	100.0	------	------	------	------	1,973	100.0	------	------
Character of working force—														
Skilled§	1	0.6	------	------	400	50.0	------	------	------	------	145	8.0	------	------
Unskilled	170	99.4	------	------	400	50.0	------	------	------	------	1,665	92.0	------	------
Totals	171	100.0	------	------	800	100.0	------	------	------	------	1,810	100.0	------	------

TABLE I. Working Force and Residents at Date of Inspection in 107 Labor Camps, With Distribution According to Sex and Skill —Concluded.

(Tables cover only camps inspected between November 1, 1914, and June 30, 1915.)

	Lumber	Per-centage	Mines and quarries	Per-centage	Oil	Per-centage	Railroad	Per-centage	Ranch	Per-centage	Miscel-laneous	Per-centage	Total	Per-centage
Working force or present capacity	769	16.2	422	8.9	121	2.5	84	1.7	157	3.3	46	.9	4,733	100.0
Residents	976	19.6	296	5.9	137	2.7	115	2.3	159	3.2	46	.9	4,953	100.0
Men	737	75.5	262	88.5	99	72.5	84	73.0	156	98.0	46	100.0	4,423	89.1
Women*	94	9.6	13	4.4	21	15.1	20	17.4	2	1.3			254	5.3
Children†	145	14.9	21	7.1	17	12.4	11	9.6	1	.7			276	5.6
Totals on three preceding subjects	976	100.0	296	100.0	137	100.0	115	100.0	159	100.0	46	100.0	4,953	100.0
Character of working force—														
Skilled§	229	29.8	7	19.5	41	42.7	8	11.7	22	14.0	6	13.0	859	21.7
Unskilled	540	70.2	29	80.5	55	57.3	60	88.3	135	86.0	40	87.0	3,094	78.3
Totals	769	100.0	36	100.0	96	100.0	68	100.0	157	100.0	46	100.0	3,953	100.0

*Women in 41 camps. No women in 59 camps. No returns from 7 camps.

†Children in 29 camps. No children in 71 camps. No returns from 7 camps

§Data on number of skilled and unskilled was not obtained in 11 camps.

TABLE II. General Sanitary Condition of 107 Labor Camps on Date of Inspection, With Number of Camps, Number of Laborers Therein and Percentages in Each Group. Table is Based on Ultimate Capacity.

(Tables cover only camps inspected between November 1, 1914, and June 30, 1915.)

	Good				Fair				Bad				Totals			
	Number of camps	Per-centage	Number of laborers	Per-centage	Number of camps	Per-centage	Number of laborers	Per-centage	Number of camps	Per-centage	Number of laborers	Per-centage	Number of camps	Per-centage	Number of laborers	Per-centage
Beet	1	17.0	18	8.7	2	33.0	95	45.8	3	50.0	94	45.5	6	100.0	207	100.0
Berry	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Construction	13	56.5	820	62.1	4	17.4	218	16.5	6	26.1	281	21.4	23	100.0	1,319	100.0
Fruit	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Grape	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Highway and grading	8	16.3	445	18.0	14	28.6	691	28.0	27	55.1	1,341	54.0	49	100.0	2.477	100.0
Hop	1	100.0	75	100.0	-----	-----	-----	-----	-----	-----	-----	-----	1	100.0	75	100.0
Lumber	4	80.0	1,272	71.8	-----	-----	-----	-----	1	20.0	500	28.2	5	100.0	1,772	100.0
Mines and quarries	1	20.0	228	51.8	2	40.0	51	11.5	2	40.0	162	36.7	5	100.0	441	100.0
Oil	6	100.0	420	100.0	-----	-----	-----	-----	-----	-----	-----	-----	6	100.0	420	100.0
Railroad	1	20.0	20	9.0	2	40.0	110	50.0	2	40.0	90	41.0	5	100.0	220	100.0
Ranch	2	40.0	275	69.5	1	20.0	20	5.0	2	40.0	101	25.5	5	100.0	396	100.0
Miscellaneous	1	50.0	6	9.0	1	50.0	60	91.0	-----	-----	-----	-----	2	100.0	66	100.0
Grand totals	38	35.5	3,579	48.4	26	24.3	1,245	16.8	43	40.2	2,569	34.8	107	100.0	7,393	100.0

TABLE III. The Sanitary Condition of 107 Labor Camps. A Detailed Report on the Most Important Sanitary Features, With Percentages.

(Tables cover only camps inspected between November 1, 1914, and June 30, 1915.)

	Beet	Percentage	Berry	Percentage	Construction	Percentage	Fruit	Percentage	Grape	Percentage	Highway and grading	Percentage	Hop	Percentage
Bathing facilities—														
No bathing facilities	4	66.7			8	34.8					32	65.4		
Natural bathing facilities on stream or lake					5	21.7					12	24.5	1	100.0
Tubs, showers, or both	2	33.3			10	43.5					4	8.1		
No data											1	2.0		
Totals	6	100.0			23	100.0					49	100.0	1	100.0
Toilet facilities—														
No toilets					3	13.1					16	32.7		
Filthy toilets	5	83.0			5	21.1					17	34.7		
Fair, but slightly exposed	1	17.0			9	39.1					10	20.4	1	100.0
Sanitary, fly-proof toilets					6	26.1					5	10.2		
No data											1	2.2		
Totals	6	100.0			23	100.0					49	100.0	1	100.0
Separate toilets for the sexes—														
Men, women and children use same toilets	2	66.7			5	62.5					7	43.7		
Separate toilets for women and children	1	33.3			2	25.0					1	6.3		
No data					1	12.5					8	50.0		
Totals (equals number of camps with women)	3	100.0			8	100.0					16	100.0		

TABLE III. The Sanitary Condition of 107 Labor Camps. A Detailed Report on the Most Important Sanitary Features, With Percentages—Continued.

(Tables cover only camps inspected between November 1, 1914, and June 30, 1915.)

	Lumber	Per-centage	Mines and quarries	Per-centage	Oil	Per-centage	Railroad	Per-centage	Ranch	Per-centage	Miscel-laneous	Per-centage	Total	Per-centage
Bathing facilities—														
No bathing facilities	3	60.0	3	60.0			5	100.0	1	20.0			56	52.4
Natural bathing facilities on stream or lake											1	50.0	19	17.7
Tubs, showers, or both	2	40.0	2	40.0	6	100.0			4	80.0	1	50.0	31	29.2
No data													1	.7
Totals	5	100.0	5	100.0	6	100.0	5	100.0	5	100.0	2	100.0	107	100.0
Toilet facilities—														
No toilets							1	20.0					20	18.6
Filthy toilets	1	20.0	4	80.0			2	40.0	2	40.0	2	100.0	38	35.7
Fair, but slightly exposed					2	30.0	1	20.0	2	40.0			26	24.3
Sanitary, fly-proof toilets	4	80.0	1	20.0	3	50.0	1	20.0	1	20.0			21	19.6
No data					1	20.0							2	1.8
Totals	5	100.0	5	100.0	6	100.0	5	100.0	5	100.0	2	100.0	107	100.0
Separate toilets for the sexes—														
Men, women and children use same toilets							1	25.0					15	36.6
Separate toilets for women and children	4	80.0			2	100.0			1	100.0			11	26.8
No data	1	20.0	2	100.0			3	75.0					15	36.6
Totals (equals number of camps with women)	5	100.0	2	100.0	2	100.0	4	100.0	1	100.0			41	100.0

TABLE III. The Sanitary Condition of 107 Labor Camps. A Detailed Report on the Most Important Sanitary Features, With Percentages—Continued.

(Tables cover only camps inspected between November 1, 1914, and June 30, 1915.)

	Beet	Per-centage	Berry	Per-centage	Con-struction	Per-centage	Fruit	Per-centage	Grape	Per-centage	Highway and grading	Per-centage	Hop	Per-centage
Washing facilities for face, hands and clothes—														
Inadequate	2	33.3	-------	-------	4	17.3	-------	-------	-------	-------	16	32.7	-------	-------
Adequate	4	66.7	-------	-------	19	82.7	-------	-------	-------	-------	29	59.2	-------	-------
No data	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	4	8.1	1	100.0
Totals	6	100.0	-------	-------	23	100.0	-------	-------	-------	-------	49	100.0	1	100.0
Stables—														
With stables	3	50.0	-------	-------	10	43.5	-------	-------	-------	-------	38	77.5	-------	-------
No stables	3	50.0	-------	-------	13	56.5	-------	-------	-------	-------	11	22.5	1	100.0
No data	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
Totals	6	100.0	-------	-------	23	100.0	-------	-------	-------	-------	49	100.0	1	100.0
Distance of stables from kitchen quarters—														
Less than 100 yards	2	66.7	-------	-------	3	30.0	-------	-------	-------	-------	21	55.2	-------	-------
100 yards and more	1	33.3	-------	-------	7	70.0	-------	-------	-------	-------	16	42.2	-------	-------
No data	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	1	2.6	-------	-------
Totals (see number of stables)	3	100.0	-------	-------	10	100.0	-------	-------	-------	-------	38	100.0	-------	-------

TABLE III. The Sanitary Condition of 107 Labor Camps. A Detailed Report on the Most Important Sanitary Features, With Percentages—Continued.

(Tables cover only camps inspected between November 1, 1914, and June 30, 1915.)

	Lumber	Per-centage	Mines and quarries	Per-centage	Oil	Per-centage	Railroad	Per-centage	Ranch	Per-centage	Miscel-laneous	Per-centage	Total	Per-centage
Washing facilities for face, hands and clothes—														
Inadequate	--------	--------	1	20.0	--------	--------	1	20.0	1	20.0	--------	--------	25	23.4
Adequate	5	100.0	3	60.0	3	--------	4	80.0	4	80.0	2	100.0	73	68.2
No data	--------	--------	1	20.0	3	--------	--------	--------	--------	--------	--------	--------	9	8.4
Totals	5	100.0	5	100.0	6	--------	5	100.0	5	100.0	2	100.0	107	100.0
Stables—														
With stables	1	20.0	4	80.0	3	50.0	--------	--------	5	100.0	--------	--------	64	59.8
No stables	4	80.0	1	20.0	3	50.0	5	100.0	--------	--------	2	100.0	43	40.2
No data	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------
Totals	5	100.0	5	100.0	6	100.0	5	100.0	5	100.0	2	100.0	107	100.0
Distance of stables from kitchen quarters—														
Less than 100 yards	1	100.0	1	25.0	--------	--------	--------	--------	3	60.0	--------	--------	31	48.4
100 yards and more	--------	--------	3	75.0	3	100.0	--------	--------	2	40.0	--------	--------	32	50.0
No data	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	1	1.6
Totals (see number of stables)	1	100.0	4	100.0	3	100.0	--------	--------	5	100.0	--------	--------	64	100.0

TABLE III. The Sanitary Condition of 107 Labor Camps. A Detailed Report on the Most Important Sanitary Features, With Percentages—Continued.

(Tables cover only camps inspected between November 1, 1914, and June 30, 1915.)

	Beet	Per-centage	Berry	Per-centage	Con-struction	Per-centage	Fruit	Per-centage	Grape	Per-centage	Highway and grading	Per-centage	Hop	Per-centage
Disposal of manure—														
Sanitary	1	33.3			1	10.0					7	18.4		
Insanitary					1	10.0					25	65.8		
No data	2	66.7			8	80.0					6	15.8		
Totals (see number of stables)	3	100.0			10	100.0					38	100.0		
Screening on kitchen and dining quarters—														
Screening	3	50.0			16	69.5					28	57.0		
No screening	3	50.0			6	26.1					20	41.0		
No data					1	4.4					1	2.0	1	100.0
Totals	6	100.0			23	100.0					49	100.0	1	100.0
Disposal of garbage—														
Sanitary	3	50.0			15	65.3					38	77.5	1	100.0
Insanitary	3	50.0			6	26.0					7	14.3		
No data					2	8.7					4	8.2		
Totals	6	100.0			23	100.0					49	100.0	1	100.0

TABLE III. The Sanitary Condition of 107 Labor Camps. A Detailed Report on the Most Important Sanitary Features, With Percentages—Continued.

(Tables cover only camps inspected between November 1, 1914, and June 30, 1915.)

	Lumber	Per-centage	Mines and quarries	Per-centage	Oil	Per-centage	Railroad	Per-centage	Ranch	Per-centage	Miscel-laneous	Per-centage	Total	Per-centage
Disposal of manure—														
Sanitary					3	100.0			2	40.0			14	21.9
Insanitary	1	100.0	3	75.0					3	60.0			33	51.5
No data			1	25.0									17	26.6
Totals (see number of stables)	1	100.0	4	100.0	3	100.0			5	100.0			64	100.0
Screening on kitchen and dining quarters—														
Screening	5	100.0	4	80.0	6	100.0	1	20.0	4	80.0	1	50.0	68	63.5
No screening			1	20.0			2	40.0	1	20.0	1	50.0	34	31.9
No data							2	40.0					5	4.6
Totals	5	100.0	5	100.0	6	100.0	5	100.0	5	100.0	2	100.0	107	100.0
Disposal of garbage—														
Sanitary	5	100.0	4	80.0	5	83.2	2	40.0	3	60.0	2	100.0	78	
Insanitary			1	20.0			1	20.0	2	40.0			20	
No data					1	16.8	2	40.0					9	
Totals	5	100.0	5	100.0	6	100.0	5	100.0	5	100.0	2	100.0	107	100.0

TABLE III. The Sanitary Condition of 107 Labor Camps. A Detailed Report on the Most Important Sanitary Features, With Percentages—Continued.

(Tables cover only camps inspected between November 1, 1914, and June 30, 1915.)

	Beet	Per-centage	Berry	Per-centage	Con-struction	Per-centage	Fruit	Per-centage	Grape	Per-centage	Highway and grading	Per-centage	Hop	Per-centage
Garbage containers—														
No containers	3	50.0	-----	-----	5	21.7	-----	-----	-----	-----	6	12.2	-----	-----
Uncovered containers	-----	-----	-----	-----	5	21.7	-----	-----	-----	-----	20	40.8	-----	-----
Covered sanitary containers	3	50.0	-----	-----	12	52.2	-----	-----	-----	-----	20	40.8	1	100.0
No data	-----	-----	-----	-----	1	4.3	-----	-----	-----	-----	3	6.2	-----	-----
Totals	6	100.0	-----	-----	23	100.0	-----	-----	-----	-----	49	100.0	1	100.0
Cubic air space—														
Less than 350 cubic feet	2	30.0	-----	-----	5	21.7	-----	-----	-----	-----	10	20.4	-----	-----
350 to 500 cubic feet	-----	-----	-----	-----	7	30.5	-----	-----	-----	-----	26	53.1	-----	-----
Over 500 cubic feet	3	50.0	-----	-----	11	47.8	-----	-----	-----	-----	10	20.4	-----	-----
No data	1	20.0	-----	-----	-----	-----	-----	-----	-----	-----	3	6.1	1	100.0
Totals	6	100.0	-----	-----	23	100.0	-----	-----	-----	-----	49	100.0	1	100.0
Living conditions—														
All use same	1	16.7	-----	-----	4	17.4	-----	-----	-----	-----	26	53.1	-----	-----
Separate conditions	-----	-----	-----	-----	1	4.4	-----	-----	-----	-----	4	8.1	-----	-----
One nationality	4	66.7	-----	-----	14	60.8	-----	-----	-----	-----	4	8.1	-----	-----
No data	1	16.6	-----	-----	4	17.4	-----	-----	-----	-----	15	30.7	1	100.0
Totals	6	100.0	-----	-----	23	100.0	-----	-----	-----	-----	49	100.0	1	100.0

TABLE III. The Sanitary Condition of 107 Labor Camps. A Detailed Report on the Most Important Sanitary Features, With Percentages—Concluded

(Tables cover only camps inspected between November 1, 1914, and June 30, 1915.)

	Lumber	Per-centage	Mines and quarries	centage Per-	Oil	Per-centage	Railroad	Per-centage	Ranch	Per-centage	Miscel-laneous	Per-centage	Total	Per-centage
Garbage containers—														
No containers	--------	--------	1	20.0	--------	--------	1	20.0	1	20.0	--------	--------	17	15.9
Uncovered containers	--------	--------	1	20.0	--------	--------	--------	--------	2	40.0	2	100.0	30	28.1
Covered sanitary containers	5	100.0	3	60.0	5	83.2	1	20.0	2	40.0	--------	--------	52	48.6
No data	--------	--------	--------	--------	1	16.8	3	60.0	--------	--------	--------	--------	8	7.4
Totals	5	100.0	5	100.0	6	100.0	5	100.0	5	100.0	2	100.0	107	100.0
Cubic air space—														
Less than 350 cubic feet	--------	--------	--------	--------	--------	--------	2	40.0	1	20.0	--------	--------	20	18.7
350 to 500 cubic feet	1	20.0	1	20.0	1	16.8	2	40.0	1	20.0	--------	--------	39	36.5
Over 500 cubic feet	4	80.0	4	80.0	4	66.6	1	20.0	3	60.0	2	100.0	42	39.2
No data	--------	--------	--------	--------	1	16.8	--------	--------	--------	--------	--------	--------	6	5.6
Totals	5	100.0	5	100.0	6	--------	5	100.0	5	100.0	2	100.0	107	100.0
Living conditions—														
All use same	4	80.0	3	60.0	1	16.8	3	60.0	4	80.0	--------	--------	46	43.0
Separate conditions	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	5	4.7
One nationality	--------	--------	--------	--------	1	16.8	--------	--------	1	20.0	2	100.0	26	24.2
No data	1	20.0	2	40.0	4	66.6	2	40.0	--------	--------	--------	--------	30	28.1
Totals	5	100.0	5	100.0	6	100.0	5	100.0	5	100.0	2	100.0	107	100.0

TABLE IV. Nationalities Represented in 107 Labor Camps.

(Tables cover only camps inspected between November 1, 1914, and June 30, 1915.)

	Beet	Berry	Construction	Fruit	Grape	Highway and grading	Hop	Lumber	Mines and quarries	Oil	Railroad	Ranch	Miscellaneous	Total	Percentage
Americans	17	-----	686	-----	-----	699	-----	344	58	127	43	103	6	2,083	48.7
Italians	-----	-----	20	-----	-----	168	-----	126	212	2	7	45	-----	580	13.6
Mexicans	-----	-----	29	-----	-----	508	-----	3	12	2	56	6	-----	616	14.4
Japanese	61	-----	-----	-----	-----	1	-----	-----	-----	-----	-----	-----	-----	62	1.5
Greeks	-----	-----	141	-----	-----	20	-----	46	-----	-----	-----	-----	40	247	5.8
Germans	-----	-----	3	-----	-----	5	-----	50	-----	3	-----	5	-----	66	1.6
Chinese	1	-----	-----	-----	-----	5	-----	-----	-----	-----	-----	-----	-----	6	.14
Portuguese	-----	-----	-----	-----	-----	-----	-----	-----	8	-----	-----	-----	-----	8	.19
Austrians	-----	-----	-----	-----	-----	92	-----	100	-----	-----	-----	-----	-----	192	4.5
Swedes	-----	-----	-----	-----	-----	70	-----	100	-----	-----	-----	-----	-----	170	4.0
Irish	-----	-----	-----	-----	-----	5	-----	-----	-----	-----	-----	-----	-----	5	.12
French	-----	-----	-----	-----	-----	2	-----	-----	-----	-----	-----	-----	-----	2	.04
Russians	-----	-----	-----	-----	-----	10	-----	-----	-----	-----	-----	-----	-----	10	.23
English	-----	-----	-----	-----	-----	1	-----	-----	-----	-----	-----	-----	-----	1	.02
Swiss	-----	-----	-----	-----	-----	1	-----	-----	-----	-----	-----	-----	-----	1	.02
Negroes	-----	-----	-----	-----	-----	26	-----	-----	-----	-----	-----	-----	-----	26	.60
Slavonians	-----	-----	19	-----	-----	65	-----	-----	-----	-----	-----	-----	-----	84	2.0
Koreans	-----	-----	-----	-----	-----	2	-----	-----	-----	-----	-----	-----	-----	2	.04
Porto Ricans	17	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	17	.4
Filipinos	92	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	92	2.1
Totals	188	-----	898	-----	-----	1,680	-----	769	290	134	106	159	46	4,270	100.0
No data	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	683	
Grand total of residents				-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	4,953	

TABLE V. Summary of Most Important Totals From Returns on 983 Labor Camps Inspected Between April 10, 1914, and June 30, 1915, Including 876 Camps Covered in Statistics in First Annual Report of the Commission.

	Number of persons	per-centage	Number of camps	per-centage
Residents—				
Men	36,164	88.4	983	100.0
Women	2,913	7.1	983	100.0
Children	1,829	4.5	983	100.0
Totals	40,906	100.0	983	100.0
Character of working force—				
Skilled	8,319	24.5	983	100.0
Unskilled	25,654	75.5	983	100.0
Totals	33,973	100.0	983	100.0
General sanitary condition—				
Good	25,156	36.8	335	34.0
Fair	23,627	34.7	342	34.8
Bad	19,423	28.5	306	31.2
Totals	68,206	100.0	983	100.0
Nationalities*—				
Native born	18,259	49.2	983	100.0
Foreign born	18,819	50.8	983	100.0
Totals	37,078	100.0	983	100.0

*No data on nativity of 4,721 laborers.

GROUP II.

TABLE I. Residents and Working Force in 663 Labor Camps, With Distribution According to Sex, Skill and Marital Condition.

(Tables cover only camps inspected between July 1, 1915 and January 1, 1916.)

	Beet	Per-centage	Con-struction	Per-centage	Fruit	Per-centage	Grape	Per-centage	Highway and grading	Per-centage	Hop	Per-centage	Lumber	Per-centage
Residents	1,758	4.4	2,130	5.3	1,151	2.8	69	.17	5,058	12.5	6,857	17.0	10,221	25.2
Men	1,567	89.2	2,059	96.7	621	53.9	64	92.8	4,944	98.8	5,069	73.9	8,074	79.0
Women	105	5.9	43	2.0	373	32.4	5	7.2	74	1.4	1,313	19.2	847	8.3
Children under 16 years	86	4.9	28	1.3	157	13.7			40	.8	475	6.9	1,300	12.7
Totals	1,758	100.0	2,130	100.0	1,151	100.0	69	100.0	5,058	100.0	6,857	100.0	10,221	100.0
Number employed	1,673	4.6	2,146	5.9	1,663	4.5	64	.17	5,565	15.2	6,356	17.5	8,356	23.0
Men	1,617	96.7	2,138	99.6	988	59.4	62	96.7	5,514	99.6	5,087	80.0	8,251	98.7
Women	56	3.3	8	.4	675	40.6	2	.3	21	.4	1,094	17.2	105	1.3
Children under 16 years											175	2.8		
Totals	1,673	100.0	2,146	100.0	1,663	100.0	64	100.0	5,565	100.0	6,356	100.0	8,356	100.0
Number of laborers skilled	131	8.4	750	37.6	225	13.5			855	16.5	10	.2	2,984	43.4
Number of laborers unskilled	1,447	91.6	1,244	62.4	1,437	86.5	64	100.0	4,323	83.5	6,346	99.8	3,896	56.6
Totals	1,578	100.0	1,994	100.0	1,662	100.0	64	100.0	5,178	100.0	6,356	100.0	6,880	100.0
Number of laborers married	1[illegible]3	2.1	317	4.6	486	7.0	6	.08	552	8.1	1,552	22.3	1,594	22.9
Skilled	48	30.0	243	76.6	80	16.5			204	37.0	2	.1	1,019	63.9
Unskilled	100	70.0	74	23.4	406	83.5	6	100.0	348	63.0	1,550	99.9	575	36.1
Totals	148	100.0	317	100.0	486	100.0	6	100.0	552	100.0	1,552	100.0	1,594	100.0

TABLE I. Residents and Working Force in 663 Labor Camps, With Distribution According to Sex, Skill and Marital Condition —Concluded.

(Tables cover only camps inspected between July 1, 1915 and January 1, 1916.)

	Mines and quarries	Percentage	Oil	Percentage	Railroad	Percentage	Ranch	Percentage	Miscellaneous	Percentage	Totals	Percentage
Residents	5,942	14.6	4,317	10.7	1,120	2.8	775	1.9	1,043	2.6	40,441	100.0
Men	4,588	77.2	2,619	60.6	955	85.3	674	86.9	547	52.4	31,781	78.5
Women	610	10.3	908	21.0	63	5.6	61	7.9	194	18.6	4,596	11.4
Children under 16 years	744	12.5	790	18.4	102	9.1	40	5.2	302	29.0	4,064	10.1
Totals	5,942	100.0	4,317	100.0	1,120	100.0	775	100.0	1,043	100.0	40,441	100.0
Number employed	4,806	13.2	3,150	8.6	987	2.7	930	2.6	743	2.0	36,439	100.0
Men	4,781	99.5	3,092	98.2	984	99.7	920	98.9	689	92.6	34,153	93.7
Women	25	.5	58	1.8	3	.3	10	1.07	54	7.4	2,111	5.8
Children under 16 years	--------	-------	--------	-------	--------	-------	--------	-------	--------	-------	175	.5
Totals	4,806	100.0	3,150	100.0	987	100.0	930	100.0	743	100.0	36,439	100.0
Number of laborers skilled	1,522	36.6	2,411	77.0	121	12.3	100	10.7	296	40.0	9,405	27.9
Number of laborers unskilled	2,646	63.4	719	23.0	861	87.7	830	89.3	445	60.0	24,258	72.1
Totals	4,168	100.0	3,130	100.0	982	100.0	930	100.0	741	100.0	33,663	100.0
Number of laborers married	676	9.7	1,277	18.4	83	1.2	88	1.3	174	2.5	6,948	100.0
Skilled	423	62.6	1,177	92.2	13	15.7	44	50.0	128	73.5	3,376	48.6
Unskilled	253	37.4	100	7.8	70	84.3	44	50.0	46	26.5	3,572	51.4
Totals	676	100.0	1,277	100.0	83	100.0	88	100.0	174	100.0	6,948	100.0

Women in 380 camps. No women in 283 camps.
Children in 250 camps. No children in 413 camps.
Women employed in 196 camps. No women employed in 467 camps.
Data on skilled and unskilled laborers was not obtained in 36 camps.
Married laborers in 438 camps. No married laborers in 82 camps. No returns from 143 camps.

TABLE II. General Sanitary Condition of 663 Labor Camps on Date of Inspection, With Number of Camps, Number of Laborers Therein and Percentages in Each Group.*

Number of Laborers Based on Capacity of Housing Facilities.

(Tables cover only camps inspected between July 1, 1915 and January 1, 1916.)

	Good				Fair				Bad				Totals			
	Number of camps	Per-centage	Number of laborers	Per-centage	Number of camps	Per-centage	Number of laborers	Per-centage	Number of camps	Per-centage	Number of laborers	Per-centage	Number of camps	Per-centage	Number of laborers	Per-centage
Beet	17	25.0	953	33.2	26	38.2	947	33.1	25	36.8	966	33.7	68	100.0	2,866	100.0
Construction	21	48.8	1,644	61.7	10	23.3	259	9.7	12	27.9	763	28.6	43	100.0	2,666	100.0
Fruit	14	51.8	1,785	66.9	7	26.0	474	17.8	6	22.2	408	15.3	27	100.0	2,667	100.0
Grape	1	16.7	25	7,6	4	66.6	150	46.1	1	16.7	150	46.1	6	100.0	325	100.0
Highway and grading	21	13.1	962	14.6	51	31.8	2,094	31.9	88	55.1	3,518	53.5	160	100.0	6,574	100.0
Hop	27	55.1	5,067	68.0	13	26.5	1,545	20.7	9	18.4	840	11.3	49	100.0	7,452	100.0
Lumber	35	38.0	3,623	33.2	39	42.4	3,960	36.2	18	19.6	3,340	30.6	92	100.0	10,923	100.0
Mines and quarries	34	49.3	3,869	53.6	25	36.2	2,648	36.7	10	14.5	698	9.7	69	100.0	7,215	100.0
Oil	66	91.7	6,855	96.5	6	8.3	245	3.5					72	100.0	7,100	100.0
Railroad	3	8.3	69	5.5	12	33.3	335	26.5	21	58.4	862	68.0	36	100.0	1,266	100.0
Ranch	12	38.7	1,046	69.0	10	32.2	280	18.5	9	29.1	189	12.5	31	100.0	1,515	100.0
Miscellaneous	3	30.0	1,100	53.3	6	60.0	954	46.2	1	10.0	10	.5	10	100.0	2,064	100.0
Totals	254	38.3	26,998	51.3	209	31.5	13,891	26.4	200	30.2	11,744	22.3	663	100.0	52,633	100.0

NOTE.—This year higher standards of ratings were used than in 1914. See page 28.

TABLE III. The Sanitary Condition of 663 Labor Camps. A Detailed Report on the Most Important Features of Sanitation, With Percentages.

(Tables cover only camps inspected between July 1, 1915 and January 1, 1916.)

	Beet	Percentage	Construction	Percentage	Fruit	Percentage	Grape	Percentage	Highway and grading	Percentage	Hop	Percentage	Lumber	Percentage
General layout—														
Good	51	75.0	35	81.4	25	92.6	4	66.6	114	71.2	39	79.6	80	87.0
Fair	2	2.9	4	9.3			1	16.7	34	21.2	9	18.4	9	9.7
Bad	8	11.8			2	7.4	1	16.7	6	3.8	1	2.0		
No data	7	10.3	4	9.3					6	3.8			3	3.3
Totals	68	100.0	43	100.0	27	100.0	6	100.0	160	100.0	49	100.0	92	100.0
Drainage—														
Stagnant pools near camp	11	16.2			2	7.4			12	7.5	2	4.1		
No stagnant pools near camp	50	73.5	38	88.4	25	92.6	6	100.0	142	88.7	47	95.9	88	95.6
No data	7	10.3	5	11.6					6	3.8			4	4.4
Totals	68	100.0	43	100.0	27	100.0	6	100.0	160	100.0	49	100.0	92	100.0
Drinking water—														
Pure drinking water supplied	64	94.2	42	97.7	27	100.0	6	100.0	151	94.4	48	98.0	83	90.2
Drinking water exposed to contamination	4	5.9	1	2.3					7	4.4	1	2.0	5	5.4
No data									2	1.2			4	4.4
Totals	68	100.0	43	100.0	27	100.0	6	100.0	160	100.0	49	100.0	92	100.0
Bathing facilities—														
No bathing facilities	21	30.9	20	46.5	6	22.2	3	50.0	96	60.0	12	24.5	21	22.8
Natural bathing facilities on stream, lake, or ocean	3	4.4	8	18.6	2	7.4			34	21.2	16	32.6	7	7.6
Tubs, showers, or both	44	64.7	15	34.9	19	70.4	3	50.0	30	18.8	21	42.9	61	66.3
No data													3	3.3
Totals	68	100.0	43	100.0	27	100.0	6	100.0	160	100.0	49	100.0	92	100.0

TABLE III. The Sanitary Condition of 663 Labor Camps. A Detailed Report on the Most Important Features of Sanitation, With Percentages—Continued.

(Tables cover only camps inspected between July 1, 1915 and January 1, 1916.)

	Mines and quarries	Per-centage	Oil	Per-centage	Railroad	Per-centage	Ranch	Per-centage	Miscel-laneous	Per-centage	Totals	Per-centage
General layout—												
Good	63	91.4	72	100.0	23	63.9	27	87.1	9	90.0	542	81.7
Fair	5	7.2			4	11.1	2	6.5			70	10.6
Bad					9	25.0	1	3.2	1	10.0	29	4.4
No data	1	1.4					1	3.2			22	3.3
Totals	69	100.0	72	100.0	36	100.0	31	100.0	10	100.0	663	100.0
Drainage—												
Stagnant pools near camp	2	2.9			10	27.8	1	3.2	1	10.0	41	6.2
No stagnant pools near camp	67	97.1	72	100.0	25	69.4	29	93.6	8	80.0	597	90.0
No data					1	2.8	1	3.2	1	10.0	25	3.8
Totals	69	100.0	72	100.0	36	100.0	31	100.0	10	100.0	663	100.0
Drinking water—												
Pure drinking water supplied	67	97.1	71	98.6	34	94.4	30	96.8	9	90.0	632	95.4
Drinking water exposed to contamination	1	1.45	1	1.4	2	5.6	1	3.2	1	10.0	24	3.6
No data	1	1.45									7	1.0
Totals	69	100.0	72	100.0	36	100.0	31	100.0	10	100.0	663	100.0
Bathing facilities—												
No bathing facilities	17	75.4	1	1.4	31	86.1	11	35.5	1	10.0	240	36.2
Natural bathing facilities on stream, lake, or ocean					1	2.8	3	9.7	2	20.0	76	11.5
Tubs, showers, or both	52	24.6	71	98.6	4	11.1	17	54.8	7	70.0	344	51.8
No data											3	.5
Total	69	100.0	72	100.0	36	100.0	31	100.0	10	100.0	663	100.0

TABLE III. The Sanitary Condition of 663 Labor Camps. A Detailed Report on the Most Important Features of Sanitation, With Percentages—Continued.

(Tables cover only camps inspected between July 1, 1915 and January 1, 1916.)

	Beet	Per-centage	Con-struction	Per-centage	Fruit	Per-centage	Grape	Per-centage	Highway and grading	Per-centage	Hop	Per-centage	Lumber	Per-centage
Use of bathing facilities—														
Laborers use baths	47	100.0	22	95.5	21	100.0	3	100.0	64	100.0	37	100.0	63	92.6
Laborers do not use baths			1	4.5										
No data													5	7.4
Totals	47	100.0	23	100.0	21	100.0	3	100.0	64	100.0	37	100.0	68	100.0
Frequency of using baths—														
Baths used daily	19	40.5	12	54.5	11	52.4	2	66.7	23	35.9	27	73.0	23	36.5
Baths used semi-weekly	16	34.1	1	4.5	8	38.2			8	12.5	2	5.4	4	6.4
Baths used weekly	10	21.3	7	31.9	1	4.7	1	33.3	26	40.7	8	21.6	30	47.6
No data	2	4.1	2	9.1	1	4.7			7	10.9			6	9.5
Totals	47	100.0	22	100.0	21	100.0	3	100.0	64	100.0	37	100.0	63	100.0
Water supply for face, hands and clothes—														
Adequate supply	67	98.5	42	97.7	27	100.0	6	100.0	158	98.7	49	100.0	89	96.7
Inadequate supply	1	1.5							2	1.3				
No data			1	2.3									3	3.3
Totals	68	100.0	43	100.0	27	100.0	6	100.0	160	100.0	49	100.0	92	100.0
Supply of washing materials—														
Basins, stoves, or both, furnished	13	19.1	16	32.2	7	25.9	2	33.3	86	53.8			71	77.4
With soap	15	22.1	13	30.2	5	18.5	3	50.0	26	16.3	3	6.1	14	15.2
With soap and towels	9	13.2	6	14.0	3	11.1	1	16.7	6	3.7			1	1.8
Nothing furnished	31	45.6	7	16.3	12	44.5			41	25.6	46	93.9	3	3.3
No data			1	2.3					1	.6			3	3.3
Totals	68	100.0	43	100.0	27	100.0	6	100.0	160	100.0	49	100.0	92	100.0

TABLE III. The Sanitary Condition of 663 Labor Camps. A Detailed Report on the Most Important Features of Sanitation, With Percentages—Continued.

(Tables cover only camps inspected between July 1, 1915 and January 1, 1916.)

	Mines and quarries	Per-centage	Oil	Per-centage	Railroad	Per-centage	Ranch	Per-centage	Miscel-laneous	Per-centage	Totals	Per-centage
Use of bathing facilities—												
Laborers use baths	51	98.1	71	100.0	5	100.0	20	100.0	6	66.7	410	97.6
Laborers do not use baths	1	1.9									2	.5
No data									3	33.3	8	1.9
Totals	52	100.0	71	100.0	5	100.0	20	100.0	9	100.0	420	100.0
Frequency of using baths—												
Baths used daily	40	78.5	39	54.9	2	40.0	9	45.0	1	16.7	208	50.8
Baths used semi-weekly	1	1.9	11	15.5			3	15.0	2	33.3	56	13.6
Baths used weekly	8	15.7	20	28.2	3	60.0	6	30.0	3	50.0	123	30.0
No data	2	3.9	1	1.4			2	10.0			23	5.6
Totals	51	100.0	71	100.0	5	100.0	20	100.0	6	100.0	410	100.0
Water supply for face, hands and clothes—												
Adequate supply	68	98.6	72	100.0	35	97.2	31	100.0	9	90.0	653	98.6
Inadequate supply	1	1.4							1	10.0	5	.7
No data					1	2.8					5	.7
Totals	69	100.0	72	100.0	36	100.0	31	100.0	10	100.0	663	100.0
Supply of washing materials—												
Basins, stoves, or both, furnished	16	23.2	15	20.8	13	36.1	11	35.5	5	50.0	255	38.5
With soap	23	33.3	35	48.7	3	8.3	7	22.6	1	10.0	148	22.3
With soap and towels	17	24.7	15	20.8			8	25.8	2	20.0	68	10.2
Nothing furnished	12	17.4	6	8.3	19	52.8	5	16.1	1	10.0	183	27.6
No data	1	1.4	1	1.4	1	2.8			1	10.0	9	1.4
Totals	69	100.0	72	100.0	36	100.0	31	100.0	10	100.0	663	100.0

TABLE III. The Sanitary Condition of 663 Labor Camps. A Detailed Report on the Most Important Features of Sanitation, With Percentages—Continued.

(Tables cover only camps inspected between July 1, 1915 and January 1, 1916.)

	Beet	Percentage	Construction	Percentage	Fruit	Percentage	Grape	Percentage	Highway and grading	Percentage	Hop	Per centage	Lumber	Percentage
Toilet facilities—														
No toilets	3	4.4	6	14.0	1	3.7	--------	--------	27	16.9	1	2.1	--------	--------
Filthy toilets	17	25.0	6	14.0	5	18.5	2	33.3	68	42.5	8	16.3	19	20.6
Fair, but slightly exposed	32	47.0	10	23.3	4	14.8	3	50.0	42	26.2	7	14.3	22	23.9
Sanitary, fly-proof toilets	16	23.6	21	48.7	17	63.0	1	16.7	23	14.4	33	67.3	48	52.2
No data	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	3	3.3
Totals	68	100.0	43	100.0	27	100.0	6	100.0	160	100.0	49	100.0	92	100.0
Separate toilets for the sexes—														
No toilets for women and children	1	2.7	1	7.7	1	5.9	--------	--------	4	9.3	1	2.4	--------	--------
Men, women and children use same toilets	19	51.3	2	15.4	4	23.5	1	33.3	12	27.9	7	17.1	2	2.6
Separate toilets for women and children	17	46.0	9	69.2	10	58.8	2	66.7	27	62.8	33	80.5	69	90.8
No data	--------	--------	1	7.7	2	11.8	--------	--------	--------	--------	--------	--------	5	6.6
Totals (equals number of women in camp)	37	100.0	13	100.0	17	100.0	3	100.0	43	100.0	41	100.0	76	100.0
Flush toilets—														
Number of camps having flush toilets	--------	--------	3	--------	12	--------	3	--------	3	--------	--------	--------	5	--------
Number of flush toilets	--------	--------	20	--------	53	--------	3	--------	6	--------	--------	--------	15	--------
Screening on kitchen and dining-room openings—														
Screening	35	51.5	31	72.1	15	55.6	5	83.3	105	65.6	2	4.2	51	55.3
No screening or ineffectual screening	33	48.5	8	18.6	9	33.3	1	16.7	55	34.6	--------	--------	37	40.2
Laborers cook in private tents	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	47	95.8	--------	--------
No data	--------	--------	4	9.3	3	11.1	--------	--------	--------	--------	--------	--------	4	4.5
Totals	68	100.0	43	100.0	27	100.0	6	100.0	160	100.0	49	100.0	92	100.0

TABLE III. The Sanitary Condition of 663 Labor Camps. A Detailed Report on the Most Important Features of Sanitation, With Percentages—Continued.

(Tables cover only camps inspected between July 1, 1915 and January 1, 1916.)

	Mines and quarries	Per-centage	Oil	Per-centage	Railroad	Per-centage	Ranch	Per-centage	Miscel-laneous	Per-centage	Totals	Per-centage
Toilet facilities—												
No toilets	--------	--------	--------	--------	13	36.1	1	3.2	--------	--------	52	7.8
Filthy toilets	12	17.5	2	2.8	10	27.8	7	22.6	3	30.0	159	24.0
Fair, but slightly exposed	32	46.3	10	13.9	5	13.9	13	41.9	1	10.0	181	27.3
Sanitary, fly-proof toilets	24	34.8	60	83.3	8	22.2	10	32.3	6	60.0	267	40.3
No data	1	1.4	--------	--------	--------	--------	--------	--------	--------	--------	4	.6
Totals	69	100.0	72	100.0	36	100.0	31	100.0	10	100.0	663	100.0
Separate toilets for the sexes—												
No toilets for women and children	--------	--------	--------	--------	3	20.0	--------	--------	--------	--------	11	2.9
Men, women and children use same toilets	6	13.7	--------	--------	3	20.0	4	23.5	2	22.3	62	16.3
Separate toilets for women and children	36	81.8	65	100.0	8	53.3	13	76.5	6	66.6	295	77.6
No data	2	4.5	--------	--------	1	6.7	--------	--------	1	11.1	12	3.2
Totals (equals number of women in camp)	44	100.0	65	100.0	15	100.0	17	100.0	9	100.0	380	100.0
Flush toilets—												
Number of camps having flush toilets	5	--------	37	--------	2	--------	6	--------	4	--------	80	--------
Number of flush toilets	118	--------	464	--------	4	--------	24	--------	134	--------	841	--------
Screening on kitchen and dining-room openings—												
Screening	56	81.2	65	90.3	10	27.8	27	87.1	8	80.0	410	61.8
No screening or ineffectual screening	13	18.8	--------	--------	26	72.2	4	12.9	1	10.0	187	28.2
Laborers cook in private tents	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	47	7.1
No data	--------	--------	7	9.7	--------	--------	--------	--------	1	10.0	19	2.9
Totals	69	100.0	72	100.0	36	100.0	31	100.0	10	100.0	663	100.0

TABLE III. The Sanitary Condition of 663 Labor Camps. A Detailed Report on the Most Important Features of Sanitation, With Percentages—Continued.

(Tables cover only camps inspected between July 1, 1915 and January 1, 1916.)

	Beet	Per-centage	Con-struction	Per centage	Fruit	Per-centage	Grape	Per-centage	Highway and grading	Per-centage	Hop	Per-centage	Lumber	Per-centage
Garbage containers—														
No containers	21	30.9	7	16.3	8	29.6			28	17.6	21	42.8	1	1.1
Uncovered containers	33	48.5	11	25.6	8	29.6	1	16.7	67	41.8	6	12.3	26	28.3
Covered containers	14	20.6	21	48.8	10	37.1	4	66.6	65	40.6	22	44.9	61	66.3
No data			4	9.3	1	3.7	1	16.7					4	4.3
Totals	68	100.0	43	100.0	27	100.0	6	100.0	160	100.0	49	100.0	92	100.0
Disposal of garbage—														
Sanitary—i.e., burned, buried or fed to hogs	48	70.6	30	69.8	20	74.1	5	83.3	116	72.5	34	69.4	83	90.3
Insanitary—i.e., fed to chickens, dumped near kitchen, etc.	17	25.0	9	20.9	7	25.9			42	26.3	15	30.6	5	5.4
No data	3	4.4	4	9.3			1	16.7	2	1.2			4	4.3
Totals	68	100.0	43	100.0	27	100.0	6	100.0	160	100.0	49	100.0	92	100.0
Hogs as garbage consumers—														
With hogs	44	64.7	7	16.3	9	33.3	4	66.6	33	20.6	26	53.1	82	89.2
No hogs	24	35.3	32	74.4	18	66.7	1	16.7	127	79.4	23	46.9	6	6.5
No data			4	9.3			1	16.7					4	4.3
Totals	68	100.0	43	100.0	27	100.0	6	100.0	160	100.0	49	100.0	92	100.0
Hogs, how kept—														
With hogs kept in pens	43	97.7	6	85.7	9	100.0	4	100.0	28	84.9	26	100.0	77	93.9
Hogs roam freely about camp grounds	1	2.3	1	14.3					5	15.1			5	6.1
No data														
Totals	44	100.0	7	100.0	9	100.0	4	100.0	33	100.0	26	100.0	82	100.0

TABLE III. The Sanitary Condition of 663 Labor Camps. A Detailed Report on the Most Important Features of Sanitation, With Percentages—Continued.

(Tables cover only camps inspected between July 1, 1915 and January 1, 1916.)

	Mines and quarries	Per-centage	Oil	Per-centage	Railroad	Per-centage	Ranch	Per-centage	Miscel-laneous	Per-centage	Totals	Per-centage
Garbage containers—												
No containers	7	10.1	----	----	10	27.8	4	12.9	1	10.0	108	16.4
Uncovered containers	24	34.8	6	8.3	16	44.4	11	35.5	2	20.0	211	31.8
Covered containers	36	52.2	58	80.6	10	27.8	16	51.6	7	70.0	324	48.8
No data	2	2.9	8	11.1	----	----	----	----	----	----	20	3.0
Totals	69	100.0	72	100.0	36	100.0	31	100.0	10	100.0	663	100.0
Disposal of garbage—												
Sanitary—i.e., burned, buried or fed to hogs	50	72.4	60	83.3	17	47.3	25	80.0	8	80.0	496	74.8
Insanitary—i.e., fed to chickens, dumped near kitchen, etc.	15	21.8	4	5.6	16	44.4	5	16.1	1	10.0	136	20.5
No data	4	5.8	8	11.1	3	8.3	1	3.1	1	10.0	31	4.7
Totals	69	100.0	72	100.0	36	100.0	31	100.0	10	100.0	663	100.0
Hogs as garbage consumers—												
With hogs	35	50.7	15	20.8	4	11.1	22	71.0	2	20.0	283	42.6
No hogs	32	46.4	55	76.4	32	88.9	8	25.9	8	80.0	366	55.3
No data	2	2.9	2	2.8	----	----	1	3.1	----	----	14	2.1
Totals	69	100.0	72	100.0	36	100.0	31	100.0	10	100.0	663	100.0
Hogs, how kept—												
With hogs kept in pens	30	85.7	15	100.0	2	50.0	21	95.5	2	100.0	263	92.9
Hogs roam freely about camp grounds	5	14.3	----	----	2	50.0	1	4.5	----	----	20	7.1
No data	----	----	----	----	----	----	----	----	----	----	----	----
Totals	35	100.0	15	100.0	4	100.0	22	100.0	2	100.0	283	100.0

TABLE III. The Sanitary Condition of 663 Labor Camps. A Detailed Report on the Most Important Features of Sanitation, With Percentages—Continued.

(Tables cover only camps inspected between July 1, 1915 and January 1, 1916.)

	Beet	Percentage	Construction	Percentage	Fruit	Percentage	Grape	Percentage	Highway and grading	Percentage	Hop	Percentage	Lumber	Percentage
Distance of hog pens from kitchen and dining-room—														
Under 15 yards	4	9.3	--------	--------	--------	--------	--------	--------	2	7.1	1	3.9	4	5.2
16 to 25 yards	1	2.3	--------	--------	--------	--------	1	25.0	1	3.6	1	3.9	--------	--------
26 to 50 yards	7	16.3	--------	--------	--------	--------	--------	--------	4	14.3	--------	--------	4	5.2
51 to 100 yards	15	34.9	2	33.3	4	44.0	1	25.0	10	35.7	3	11.5	24	31.2
101 to 250 yards	9	20.9	1	16.7	4	44.0	2	50.0	3	10.7	3	11.5	21	27.2
251 to 500 yards	3	7.0	2	33.3	--------	--------	--------	--------	5	17.9	10	38.4	14	18.2
Over 500 yards	4	9.3	1	16.7	1	12.0	--------	--------	3	10.7	8	30.8	10	13.0
Totals	43	100.0	6	100.0	9	100.0	4	100.0	28	100.0	26	100.0	77	100.0
Disposal of kitchen sewage—														
Covered cesspool, septic tank or city sewer	42	61.8	25	58.1	20	74.1	4	66.6	48	30.0	8	16.4	34	36.9
Open cesspool	4	5.9	1	2.3	1	3.7	--------	--------	17	10.6	1	2.0	2	2.2
Sewage poured on surface of the ground near kitchen	19	27.9	10	23.3	4	14.8	1	16.7	76	47.5	38	77.6	6	6.5
Sewage run into a creek	3	4.4	3	7.0	2	7.4	--------	--------	17	10.6	1	2.0	44	47.9
No data	--------	--------	4	9.3	--------	--------	1	16.7	2	1.3	1	2.0	6	6.5
Totals	68	100.0	43	100.0	27	100.0	6	100.0	160	100.0	49	100.0	92	100.0
Stables—														
With stables	49	72.0	16	37.2	13	48.2	5	83.3	134	83.7	24	49.0	46	50.0
No stables	19	38.0	27	62.8	14	51.8	1	16.7	26	16.3	25	51.0	42	45.6
No data	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	4	4.4
Totals	68	100.0	43	100.0	27	100.0	6	100.0	160	100.0	49	100.0	92	100.0

TABLE III. The Sanitary Condition of 663 Labor Camps. A Detailed Report on the Most Important Features of Sanitation, With Percentages—Continued.

(Tables cover only camps inspected between July 1, 1915 and January 1, 1916.)

	Mines and quarries	Per-centage	Oil	Per-centage	Railroad	Per-centage	Ranch	Per-centage	Miscel-laneous	Per-centage	Totals	Per-centage
Distance of hog pens from kitchen and dining-room—												
Under 15 yards	1	3.3							1	50.0	13	4.9
16 to 25 yards	2	6.7					1	4.8			7	2.7
26 to 50 yards	3	10.0	1	6.7			1	4.8			20	7.6
51 to 100 yards	5	16.7	3	20.0			8	38.1	1	50.0	76	28.9
101 to 250 yards	6	20.0	1	6.7	1	50.0	4	19.0			55	21.0
251 to 500 yards	7	23.3	8	53.3			5	23.8			54	20.5
Over 500 yards	6	20.0	2	13.3	1	50.0	2	9.5			38	14.4
Totals	30	100.0	15	100.0	2	100.0	21	100.0	2	100.0	263	100.0
Disposal of kitchen sewage—												
Covered cesspool, septic tank or city sewer	30	43.5	62	86.1	5	13.9	20	64.5	8	80.0	306	46.2
Open cesspool	1	1.5			1	2.8			1	10.0	29	4.4
Sewage poured on surface of the ground near kitchen	17	24.6	2	2.8	25	69.4	6	19.4	1	10.0	205	30.8
Sewage run into a creek	15	21.8	1	1.4	4	11.1	4	12.9			94	14.2
No data	6	8.6	7	9.7	1	2.8	1	3.2			29	4.4
Totals	69	100.0	72	100.0	36	100.0	31	100.0	10	100.0	663	100.0
Stables—												
With stables	49	71.0	45	62.5	10	27.8	31	100.0	8	80.0	430	64.8
No stables	20	29.0	27	37.5	26	72.2			2	20.0	229	34.6
No data											4	.6
Totals	69	100.0	72	100.0	36	100.0	31	100.0	10	100.0	663	100.0

TABLE III. The Sanitary Condition of 663 Labor Camps. A Detailed Report on the Most Important Features of Sanitation, With Percentages—Continued.

(Tables cover only camps inspected between July 1, 1915 and January 1, 1916.)

	Beet	Percentage	Construction	Percentage	Fruit	Percentage	Grape	Percentage	Highway and grading	Percentage	Hop	Percentage	Lumber	Percentage
Distance of stable from kitchen and dining quarters—														
Less than 100 yards	33	67.3	3	18.7	7	53.8	1	20.0	73	54.5	4	16.7	8	17.4
100 yards or more	15	30.6	12	75.0	6	46.2	4	80.0	61	45.5	20	83.3	38	82.6
No data	1	2.1	1	6.3										
Totals	49	100.0	16	100.0	13	100.0	5	100.0	134	100.0	24	100.0	46	100.0
Disposal of manure—														
Sanitary—i.e., burned, spread on land, put in fly-tight manure box, etc.	12	24.5	9	56.2	3	23.1	3	60.0	54	40.4	16	66.6	21	45.6
Insanitary—piled near kitchen, etc.	37	75.5	7	43.8	10	76.9	2	40.0	79	58.9	8	33.7	25	54.4
No data									1	.7				
Totals	49	100.0	16	100.0	13	100.0	5	100.0	134	100.0	24	100.0	46	100.0
Condition of sleeping quarters—														
Sanitary quarters—i.e., clean floors, no vermin, no deleterious matter	44	64.7	39	90.7	20	74.1	5	83.3	114	71.2	10	20.4	56	60.8
Insanitary quarters—i.e., wet floors, etc.	24	35.3	4	9.3	4	14.8			45	28.2			32	34.8
No inspection made, tents owned by laborers											39	79.6		
No data					3	11.1	1	16.7	1	.6			4	4.4
Totals	68	100.0	43	100.0	27	100.0	6	100.0	160	100.0	49	100.0	92	100.0
Kind of floors in sleeping quarters—														
Wooden floors	48	70.6	17	39.5	25	92.6	5	83.3	19	12.0	1	2.0	88	95.6
Earthen floors	10	14.7	21	48.8	2	7.4			133	83.0	47	96.0		
No data	10	14.7	5	11.7			1	16.7	8	5.0	1	2.0	4	4.4
Totals	68	100.0	43	100.0	27	100.0	6	100.0	160	100.0	49	100.0	92	100.0

TABLE III. The Sanitary Condition of 663 Labor Camps. A Detailed Report on the Most Important Features of Sanitation, With Percentages—Continued.

(Tables cover only camps inspected between July 1, 1915 and January 1, 1916.)

	Mines and quarries	Per-centage	Oil	Per-centage	Railroad	Per-centage	Ranch	Per-centage	Miscel-laneous	Per-centage	Totals	Per-centage
Distance of stable from kitchen and dining quarters—												
Less than 100 yards	10	20.4	3	6.6	9	90.0	15	48.3	2	25.0	168	39.1
100 yards or more	39	79.6	42	93.4	1	10.0	16	51.7	6	75.0	260	60.4
No data											2	.5
Totals	49	100.0	45	100.0	10	100.0	31	100.0	8	100.0	430	100.0
Disposal of manure—												
Sanitary—i.e., burned, spread on land, put in fly-tight manure box, etc.	19	38.8	35	77.8			18	58.0	4	50.0	194	45.1
Insanitary—i.e., piled near kitchen, etc.	30	61.2	9	20.0	10	100.0	13	42.0	3	37.5	233	54.2
No data			1	2.2					1	12.5	3	.7
Totals	49	100.0	45	100.0	10	100.0	31	100.0	8	100.0	430	100.0
Condition of sleeping quarters—												
Sanitary quarters—i.e., clean floors, no vermin, no deleterious matter	57	82.6	71	98.6	20	55.6	20	64.6	8	80.0	464	70.0
Insanitary quarters—i.e., wet floors, etc.	10	14.5	1	1.4	15	41.7	10	32.2	2	20.0	147	22.2
No inspection made, tents owned by laborers											39	5.9
No data	2	2.9			1	2.7	1	3.2			13	1.9
Totals	69	100.0	72	100.0	36	100.0	31	100.0	10	100.0	663	100.0
Kind of floors in sleeping quarters—												
Wooden floors	42	60.9	72	100.0	25	69.4	29	93.6	9	90.0	380	57.3
Earthen floors	1	1.4			10	27.8			1	10.0	225	34.0
No data	26	37.7			1	2.8	2	6.4			58	8.7
Totals	69	100.0	72	100.0	36	100.0	31	100.0	10	100.0	663	100.0

TABLE III. The Sanitary Condition of 663 Labor Camps. A Detailed Report on the Most Important Features of Sanitation, With Percentages—Continued.

(Tables cover only camps inspected between July 1, 1915 and January 1, 1916.)

	Beet	Percentage	Construction	Percentage	Fruit	Percentage	Grape	Percentage	Highway and grading	Percentage	Hop	Percentage	Lumber	Percentage
Bunks, sanitary—														
Wood	30	44.1	15	31.9	8	11.1			57	35.6	1	2.0	11	12.0
Steel	6	8.85	21	48.8	12	44.5	5	83.3	45	28.2	2	4.1	51	55.4
Both wood and steel	2	2.95	3	7.0	3	11.1			12	9.5	1	2.0	22	23.9
Bunks, insanitary—														
*Wood	30	44.1	4	9.3	5	18.5			31	19.4			2	2.2
Steel									1	.6			1	1.1
Both wood and steel									5	3.1			1	1.1
No bunks supplied					4	14.8			8	5.0	6	12.2		
Bunks owned by individuals											39	79.7		
No data							1	16.7	1	.6			4	4.3
Totals	68	100.0	43	100.0	27	100.0	6	100.0	160	100.0	49	100.0	92	100.0
Not sufficient bunks supplied	2								17					
Cubic air space per capita in sleeping quarters—														
Less than 350 cubic feet per person	6	8.8	8	18.6	2	7.4			70	43.8	1	2.0	2	2.2
350 to 500 cubic feet per person	15	22.0	18	41.9	5	18.5			52	32.5	2	4.1	4	4.3
Over 500 cubic feet per person	35	51.5	12	27.9	17	63.0	4	66.6	27	16.9	4	8.2	76	82.6
No data	12	17.7	5	11.6	3	11.1	2	33.4	11	6.8	42	85.7	10	10.9
Totals	68	100.0	43	100.0	27	100.0	6	100.0	160	100.0	49	100.0	92	100.0

NOTE.—Due to misunderstanding in some inspections all wooden bunks were classed insanitary.

TABLE III. The Sanitary Condition of 663 Labor Camps. A Detailed Report on the Most Important Features of Sanitation, With Percentages—Continued.

(Tables cover only camps inspected between July 1, 1915 and January 1, 1916.)

	Mines and quarries	Per-centage	Oil	Per-centage	Railroad	Per-centage	Ranch	Per-centage	Miscel-laneous	Per-centage	Totals	Per-centage
Bunks, sanitary—												
Wood	9	13.0	2	2.8	10	27.8	6	19.4	5	5.0	149	22.5
Steel	42	60.8	69	95.8	6	16.7	12	38.7			271	40.8
Both wood and steel	4	5.9	1	1.4	4	11.1	4	12.9	1	10.0	57	8.6
Bunks, insanitary—												
*Wood	7	10.1			11	30.6	9	29.0	4	40.0	103	15.5
Steel	3	4.3									5	.77
Both wood and steel					3	8.2					9	1.38
No bunks supplied					1	2.8					19	2.88
Bunks owned by individuals											39	5.89
No data	4	5.9			1	2.8					11	1.68
Totals	69	100.0	72	100.0	36	100.0	31	100.0	10	100.0	663	100.0
Not sufficient bunks supplied											19	
Cubic air space per capita in sleeping quarters—												
Less than 350 cubic feet per person	3	4.4	1	1.4	9	25.0			1	10.0	103	15.5
350 to 500 cubic feet per person	8	11.6	1	1.4	11	30.6	2	6.5	1	10.0	119	18.0
Over 500 cubic feet per person	29	42.0	69	95.8	8	22.2	27	87.0	8	80.0	316	47.7
No data	29	42.0	1	1.4	8	22.2	2	6.5			125	18.8
Totals	69	100.0	72	100.0	36	100.0	31	100.0	10	100.0	663	100.0

NOTE.—Due to misunderstanding in some inspections all wooden bunks were classed insanitary.

TABLE III. The Sanitary Condition of 663 Labor Camps. A Detailed Report on the Most Important Features of Sanitation, With Percentages—Continued.

(Tables cover only camps inspected between July 1, 1915 and January 1, 1916.)

	Beet	Percentage	Construction	Percentage	Fruit	Percentage	Grape	Percentage	Highway and grading	Percentage	Hop	Percentage	Lumber	Percentage
General living and sleeping conditions—														
Where all races have same conditions	24	35.3	25	58.2	12	44.4	4	66.6	131	81.9	11	22.4	84	91.2
Where some aliens have separate conditions	7	10.3	1	2.3	5	18.5	----------	--------	6	3.7	18	36.8	3	3.3
Where laborers are all of same nationality	30	44.1	12	27.9	10	37.1	1	16.7	16	10.0	20	40.8	4	4.4
No data	7	10.3	5	11.6	----------	--------	1	16.7	7	4.4	----------	--------	1	1.1
Totals	68	100.0	43	100.0	27	100.0	6	100.0	160	100.0	49	100.0	92	100.0

TABLE III. The Sanitary Condition of 663 Labor Camps. A Detailed Report on the Most Important Features of Sanitation, With Percentages—Concluded.

(Tables cover only camps inspected between July 1, 1915 and January 1, 1916.)

	Mines and quarries	Per-centage	Oil	Per-centage	Railroad	Per-centage	Ranch	Per-centage	Miscel-laneous	Per-centage	Totals	Per-centage
General living and sleeping conditions—												
Where all races have same conditions	53	76.8	22	30.6	22	61.1	18	58.0	6	60.0	412	62.1
Where some aliens have separate conditions	10	14.5	4	5.6	2	5.6	3	9.7	3	30.0	62	9.4
Where laborers are all of same nationality	5	7.3	46	63.8	12	33.3	8	25.8	1	10.0	165	24.9
No data	1	1.4					2	6.5			24	3.6
Totals	69	100.0	72	100.0	36	100.0	31	100.0	10	100.0	663	100.0

TABLE IV. Nationalities Represented in 663 Labor Camps.

(Tables cover only camps inspected between July 1, 1915, and January 1, 1916.)

	Beet	Construction	Fruit	Grape	Highway and grading	Hop	Lumber	Mines and quarries	Oil	Railroad	Ranch	Miscellaneous	Total	Percentage
Native born—														
Whites	546	1,230	897	30	2,632	2,721	4,005	1,918	4,659	217	362	689	19,906	53.060
Negro					60								60	.160
Indian					4	402	1				2		409	1.090
Italians	21	272	138		655	605	1,272	1,066	1	101	90	58	4,279	11.405
Mexicans	208	36	149		747	525	9	122	2	582	131	140	2,651	7.065
Japanese	580		113	35	9	969			3	29	38	10	1,786	4.760
Spanish	4	22	20		62	375	34	655		6	11		1,189	3.168
Portuguese	22	108	121		90	75	132	370	21	2	47	7	995	2.652
Greeks		37			100	487	62	94		78		30	888	2.367
Swedes	2	57	2		117		461	48	4	9	1	25	726	1.937
Slavonians		80			280		220	138		8			726	1.936
Chinese	46	17	46	4	26	331	92	21	22	15	12	11	643	1.714
Germans	16	60	14		60	84	132	91	31	16	42	76	622	1.659
Finns	1				6	2	414	15		4			442	1.178
East Indians	165					216	6						387	1.032
Austrians					169		52	82	2	27	1		333	.887
Russian Germans											230		230	.612
Irish		41			15		120	6	1	32	3	1	219	.583
Serbians					137		1	1					139	.370
English	2	27	4		20		12	31	10		2		108	.288
Norwegians					16		83	1		6	1		107	.285
Canadians	1	4			1		65	5	1	1			78	.208
Armenians			75					2					77	.205
Coreans	1					44		17					62	.165
Russians		3			14		27	3		12			59	.156
Swiss	12	1	1		2		19	2	20	1	1		59	.156
Filipinos	41				3								44	.117
Danish	14	1			7		8	8	1		1	2	42	.112
Syrians						31							31	.083
French	3		3		2		12	4			5		29	.077
Hungarians					27								27	.072

Maltese					15			12					27	.072
Scandinavians					14						10		24	.064
Montenegrins					2			21					23	.061
Scotch		2	2		3		4	7			2		20	.053
Albanians										15			15	.040
Polish							11						11	.029
Australians					10			1					11	.029
Belgians					1		6				1		8	.021
Hollanders		1			2						3	1	7	.019
Turks							2	2					4	.001
Bohemians							2	1					3	.008
Bulgarians								1			2		3	.008
Cornish								3					3	.008
New Zealanders							1	1					2	.005
Brazilians							1						1	.003
Totals	1,685	1,999	1,585	69	5,308	6,867	7,266	4,749	4,778	1,161	998	1,050	37,515	100.000

NOTE. No foreign born in 108 camps. No data from 23 camps.

TABLE V. Native Born—Foreign Born and Foreign Born Naturalized. Men, Women, and Children Included in Each Group.

(Tables cover only camps inspected between July 1, 1915, and January 1, 1916.)

	Number of native born Americans in labor camps on date of inspection	Percentage	Number of foreign born persons in labor camps on date of inspection	Percentage	Total for each camp	Percentage	Number of foreign born persons in camps on date of inspection who had become naturalized	Percentage number of persons naturalized bears to total number of foreign born
Beet	546	32.4	1,139	67.6	1,685	100.0	24	2.1
Construction	1,230	61.5	769	38.5	1,999	100.0	168	21.8
Fruit	897	56.6	688	43.4	1,585	100.0	10	1.4
Grape	30	43.5	39	56.5	69	100.0	----	----
Highway and grading	2,696	50.8	2,612	49.2	5,308	100.0	135	5.1
Hop	3,123	45.5	3,744	54.5	6,867	100.0	528	14.2
Lumber	4,006	55.1	3,260	44.9	7,266	100.0	637	19.5
Mines and quarries	1,918	40.5	2,831	59.5	4,749	100.0	78	2.7
Oil	4,659	97.5	119	2.5	4,778	100.0	33	27.7
Railroad	217	18.7	944	81.3	1,161	100.0	16	1.6
Ranch	364	36.5	634	63.5	998	100.0	44	6.9
Miscellaneous	689	65.6	361	34.4	1,050	100.0	113	31.3
Totals	20,375	54.3	17,140	45.7	37,515	100.0	1,786	10.4

NOTE. Foreign born in 532 camps; of this number 160 camps had naturalized foreign born; 231 camps had no naturalized foreign born, and 141 camps gave no returns on this subject.

TABLE VI. Number of Camps Where Foreign Born Laborers Were Controlled by Padrones. Table Shows Nationalities so Controlled and Nature of the Relation Existing Between Laborers and Padrones.

(Tables cover only camps inspected between July 1, 1915, and January 1, 1916.)

	Albanians	Austrians	Chinese	East Indians	Filipinos	Greeks	Italians	Japanese	Maltese	Mexicans	Russians	Slavonians	Spanish	Total	Interpreter	Padrone	Total
Beet			2	5	2			18		3				30		30	30
Construction																	
Fruit			1					1					1	3	1	2	3
Grape																	
Highway and grading		2					3		1		1	1		8	1	7	8
Hop				1									1	2		2	2
Lumber																	
Mines and quarries							2		2					4	1	3	4
Oil																	
Railroad	1	1				4	5	1	1					13	3	10	13
Ranch							1							1		1	1
Miscellaneous								1						1		1	1
Totals	1	3	3	6	2	4	11	21	4	3	1	1	2	62	6	56	62

NOTE. Figures on this subject are largely dependent upon the season; e.g., more padrones would be found during harvest season.

TABLE VII. The Attitude of Camp Foremen Toward Foreign Born Labor and Native Born Labor. Table Shows Nationalities Preferred.

(Tables cover only camps inspected between July 1, 1915, and January 1, 1916.)

	Beet	Construction	Fruit	Grape	Highway and grading	Hop	Lumber	Mines and quarries	Oil	Railroad	Ranch	Miscellaneous	Total	Percentage
Favorable to foreign-born labor	46	24	19	3	103	38	74	59	15	27	19	6	433	65.3
Unfavorable to foreign-born labor	10	13	6	1	33	8	16	7	57	2	9	3	165	24.9
No data	12	6	2	2	24	3	2	3	------	7	3	1	65	9.8
Totals	68	43	27	6	160	49	92	69	72	36	31	10	663	100.0
Favorable to native-born labor	53	31	21	4	114	27	88	58	72	15	24	9	516	77.8
Unfavorable to native-born labor	4	4	4	------	19	18	------	7	------	12	4	------	72	10.9
No data	11	8	2	2	27	4	4	4	------	9	3	1	75	11.3
Totals	68	43	27	6	160	49	92	69	72	36	31	10	663	100.0
Nationalities preferred—														
American	9	20	8	1	37	9	39	15	71	------	7	3	214	31.39
Armenian	------	------	1	------	------	------	------	------	------	------	------	------	1	.147
Austrian	------	------	------	------	5	------	1	1	------	------	------	------	7	1.03
Chinese	5	------	1	------	------	4	------	------	------	------	------	------	10	1.47
Corean	------	------	------	------	------	------	------	1	------	------	------	------	1	.147
Danish	------	------	------	------	------	------	1	------	------	------	------	------	1	.147
East Indian	1	------	------	------	------	1	------	------	------	------	------	------	2	.29
Finn	------	------	------	------	------	------	10	------	------	------	------	------	10	1.47
German	------	------	------	1	------	------	------	1	------	------	4	------	6	.88
Greek	------	------	------	------	2	------	1	------	------	1	------	------	4	.58
Irish	------	1	------	------	------	------	------	------	------	1	------	------	2	.29
Italian	1	4	1	------	19	6	17	14	------	5	2	------	69	10.11
Japanese	4	------	------	1	------	12	------	------	------	------	------	------	17	2.48
Mexican	8	------	8	------	7	------	------	------	------	6	------	1	20	2.93

North European			1										1	.147
Norwegian		1											1	.147
Portuguese	2		2		2		5	2			2		15	2.19
Scandinavian											3		3	.143
Scotch								1					1	.147
Slavonian		1			7		1						9	1.32
Spanish			1					4					5	.73
Swedish		1		1	1		11						14	2.06
No preference for any nationality	31	10	10	1	59	17	6	29	1	14	13	4	195	28.63
No data	12	6	4	1	26	4		4		9	5	2	73	10.86
*Totals	68	44	27	6	165	53	92	72	72	36	36	10	681	100.0

*Total is greater than total number of camps inspected for the reason that many foremen preferred more than one nationality.

TABLE VIII. Lowest Rates of Wages by Camps (exclusive of board and lodging).

(Tables cover only camps inspected between July 1, 1915, and January 1, 1916.)

	Beet	Percentage	Construction	Percentage	Fruit	Percentage	Grape	Percentage	Highway and grading	Percentage	Hop	Percentage	Lumber	Percentage
Lowest rates per hour—														
17 cents	5	7.3												
18 cents	2	2.9												
20 cents	1	1.4												
21½ cents	3	4.4												
Lowest rates per day—														
$0.90													1	1.1
1.00	1	1.4												
1.25	1	1.4			1	3.7								
1.30					1	3.7								
1.35													1	1.1
1.40													1	1.1
1.45					1	3.7								
1.50	7	10.3	1	2.3	2	7.4	1	16.7					3	3.3
1.55					2	7.4							2	2.2
1.60					2	7.4							7	7.5
1.65													2	2.2
1.70					1	3.7								
1.75	5	7.3			7	26.0			1	.6			6	6.5
1.85					8	11.1							6	6.5
1.90													10	10.8
2.00	12	18.0	4	9.3	4	14.8	2	33.3	27	16.9			20	21.8
2.10	19	28.0												
2.15													1	1.1
2.20			1	2.3										
2.25			5	11.6			2	33.3	56	35.0			11	12.0
2.35														
2.40									1	.6				
2.50			19	44.3					58	36.4			10	10.8
2.60													4	4.3
2.70			1	2.3										

2.75									2	1.2			1	1.1
2.80									1	.6				
2.85													3	3.3
2.90														
3.00			5	11.6									1	1.1
3.25														
3.45														
3.50													1	1.1
3.75			3	7.0										
3.85														
No data	12	17.6	4	9.3	3	11.1	1	16.7	14	8.7			1	1.1
Totals	68	100.0	43	100.0	27	100.0	6	100.0	160	100.0			92	100.0
Rates per 100 pounds paid for picking hops—														
$0.80 per 100 pounds											1	2.0		
.85 per 100 pounds											2	4.0		
.90 per 100 pounds											21	42.9		
1.00 per 100 pounds											20	40.9		
No data											5	10.2		
Totals											49	100.0		

TABLE VIII. Lowest Rates of Wages by Camps (exclusive of board and lodging)—Concluded.

(Tables cover only camps inspected between July 1, 1915, and January 1, 1916.)

	Mines and quarries	Per-centage	Oil	Per-centage	Railroad	Per-centage	Ranch	Per-centage	Miscel-laneous	Per-centage	Total	Per-centage
Lowest rates per hour—												
17 cents											5	.8
18 cents											2	.3
20 cents											1	.1
21½ cents											3	.5
Lowest rates per day—												
$0.90											1	.1
1.00											1	.1
1.25					9	25.0					11	1.7
1.30											1	.1
1.35											1	.1
1.40											1	.1
1.45											1	.1
1.50					1	2.8	1	3.2	1	10.0	17	2.6
1.55											4	.6
1.60					1	2.8	5	16.1			15	2.3
1.65											2	.3
1.70											1	.1
1.75					8	22.2	3	9.7			80	4.5
1.85							2	6.5			11	1.7
1.90	3	4.3									13	2.0
2.00	12	17.4			8	22.2	8	25.8	1	10.0	98	14.9
2.10	1	1.5					5	16.1			25	3.8
2.15											1	.1
2.20											1	.1
2.25	9	13.0			7	19.5	6	19.4			96	14.5
2.35			2	2.8							2	.3
2.40											1	.1
2.50	18	26.1	10	13.8					3	30.0	118	17.9
2.60											4	.6

2.70											1	.1
2.75	11	15.8							2	20.0	16	2.4
2.80									1	10.0	2	.3
2.85											3	.5
2.90			2	2.8							2	.3
3.00	12	17.4	33	45.9					1	10.0	52	7.8
3.25	1	1.5	1	1.4							2	.3
3.45			11	15.3							11	1.7
3.50	1	1.5	5	6.9							7	1.1
3.75											3	.5
3.85			8	11.1							8	1.2
No data	1	1.5			2	5.5	1	3.2	1	10.0	40	6.0
Totals	69	100.0	72	100.0	36	100.0	31	100.0	10	100.0	614	92.6
Rates per 100 pounds paid for picking hops—												
$0.80 per 100 pounds											1	.1
.85 per 100 pounds											2	.3
.90 per 100 pounds											21	3.2
1.00 per 100 pounds											20	3.1
No data											5	.7
Grand total											663	100.0

TABLE IX. Highest Rates of Wages by Camps.

(Tables cover only camps inspected between July 1, 1915, and January 1, 1916.)

	Beet	Percentage	Construction	Percentage	Fruit	Percentage	Grape	Percentage	Highway and grading	Percentage	Hop	Percentage	Lumber	Percentage
Highest rates per hour—														
17 cents	3	4.4												
18 cents	2	2.9												
20 cents	1	1.5												
21½ cents	1	1.5												
22 cents	2	2.9												
24 cents	2	2.9												
Highest rates per day—														
$1.25	1	1.5			1	3.7								
1.50	1	1.5			2	7.4	1	16.66						
1.60	1	1.5												
1.75	2	2.9			1	3.7								
1.85					2	7.4								
2.00	9	13.2	1	2.3	5	18.6	1	16.66	1	.6				
2.10	2	2.9			2	7.4								
2.25	2	2.9			1	3.7	1	16.66	2	1.2				
2.30					1	3.7								
2.50	3	4.4							24	15.0				
2.60					1	3.7							3	3.3
2.70														
2.75					2	7.4	1	16.66	12	7.5				
2.85	3	4.4												
3.00	7	10.3	2	4.7	1	3.7			23	14.4			1	1.1
3.10	5	7.4											1	1.1
3.25	1	1.5					1	16.66					2	2.2
3.30									4	2.5				
3.40			1	2.3										
3.50			3	6.9	1	3.7			34	21.3			4	4.3
3.60	5	7.4											4	4.3
3.75			1	2.3					1	.6			5	5.4
3.85	3	4.4											1	1.1

3.90					1	3.7								
4.00			5	11.7	3	11.1			22	13.8			15	16.2
4.15													1	1.1
4.25									2	1.2			2	2.2
4.30									1	.6			3	3.3
4.50			6	14.0					8	5.0			3	3.3
4.60														
4.70													9	9.8
4.75													3	3.3
5.00			10	23.3					8	5.0			10	10.8
5.25													1	1.1
5.50			1	2.3										
5.60													4	4.4
5.75			1	2.3										
5.90													2	2.2
6.00			2	4.7					2	1.2			10	10.8
6.25			1	2.3										
6.35													5	5.4
6.50			1	2.3					1	.6			1	1.1
6.75			1	2.3										
6.90														
7.00			2	4.7									1	1.1
7.50			1	2.3										
No data	12	17.7	4	9.3	3	11.1	1	16.66	15	9.5			1	1.1
Totals	68	100.0	43	100.0	27	100.0	6	100.0	160	100.0			92	100.0
Rates per 100 pounds paid for packing hops—														
$0.80 per 100 pounds											1	2.0		
.85 per 100 pounds											2	4.0		
.90 per 100 pounds											21	43.0		
1.00 per 100 pounds											20	41.0		
No data											5	10.0		
Totals											49	100.0		

TABLE IX. Highest Rates of Wages by Camps—Concluded.

(Tables cover only camps inspected between July 1, 1915, and January 1, 1916.)

	Mines and quarries	Per-centage	Oil	Per-centage	Railroad	Per-centage	Ranch	Per-centage	Miscel-laneous	Per-centage	Total	Per-centage
Highest rates per hour—												
17 cents											3	.5
18 cents											2	.3
20 cents											1	.1
21½ cents											1	.1
22 cents											2	.3
24 cents											2	.3
Highest rates per day—												
$1.25					6	16.6					8	1.2
1.50					2	5.5					6	.9
1.60							1	3.2			2	.3
1.75					4	11.1	2	6.4			9	1.4
1.85							1	3.2			3	.5
2.00					4	11.1	4	13.0	1	10.0	26	3.9
2.10							6	19.5			10	1.5
2.25					7	19.5	9	29.1			22	3.3
2.30	2	2.9									3	.5
2.50	4	5.7			3	8.5	1	3.2			35	5.3
2.60							2	6.4			6	.9
2.70							1	3.2			1	.1
2.75					1	2.8	1	3.2			17	2.6
2.85							1	3.2			4	.6
3.00	6	8.7			1	2.8			1	10.0	42	6.3
3.10											6	.9
3.25	2	2.9			2	5.5					8	1.2
3.30											4	.6
3.40											1	.1
3.50	10	14.5	6	8.5	1	2.8			3	30.0	62	9.4
3.60											9	1.4
3.75	1	1.5									8	1.2
3.85											4	.6

3.90					1	2.8					2	.3
4.00	14	20.3	9	12.5	2	5.5			1	10.0	71	10.8
4.15											1	.1
4.25	2	2.9									6	.9
4.30											4	.6
4.50	4	5.7	4	5.5					2	20.0	27	4.1
4.60			2	2.8							2	.3
4.70	1	1.5									10	1.5
4.75			3	4.2			1	3.2			7	1.1
5.00	18	26.1	5	6.8							51	7.7
5.25			1	1.4							2	.3
5.50			4	5.5					1	10.0	6	.9
5.60											4	.6
5.75			3	4.2							4	.6
5.90											2	.3
6.00	3	4.3	14	19.5							31	4.7
6.25											1	.1
6.35											5	.8
6.50											3	.5
6.75	1	1.5									2	.3
6.90			1	1.4							1	.1
7.00			17	23.5							20	3.0
7.50			3	4.2							4	.6
No data	1	1.5			2	5.5	1	3.2	1	10.0	41	6.2
Totals	69	100.0	72	100.0	36	100.0	31	100.0	10	100.0	614	92.6
Rates per 100 pounds paid for picking hops—												
$0.80 per 100 pounds											1	.1
.85 per 100 pounds											2	.3
.90 per 100 pounds											21	3.2
1.00 per 100 pounds											20	3.0
No data											5	.7
Grand total											663	100.0

TABLE X. Average Rate of Wages Paid in Labor Camps.

(Table does not include hop camps.)

(Tables cover only camps inspected between July 1, 1915 and January 1, 1916.)

	Average low wage	Average high wage	General average of all wages
Beet	1.90	2.14	2.02
Construction	2.55	4.79	3.67
Fruit	1.70	2.45	2.07
Grape	2.00	2.35	2.17
Highway and grading	2.31	3.45	2.88
Lumber	2.05	4.63	3.34
Mines and quarries	2.51	4.11	3.31
Oil	3.11	5.56	4.33
Railroad	1.77	2.25	2.01
Ranch	1.95	2.28	2.11
Miscellaneous	2.48	3.28	2.88
General average of wages paid in all camps	2.21	3.39	2.80

TABLE XI. Cost of Board in 663 Labor Camps.

(Tables cover only camps inspected between July 1, 1915, and January 1, 1916.)

Cost per meal	Beet	Per-centage	Con-struction	Per-centage	Fruit	Per-centage	Grape	Per-centage	Highway and grading	Per-centage	Hop	Per-centage	Lumber	Per-centage
9 cents					3	11.1								
10 cents	3	4.4												
12 cents	2	2.9			1	3.7	1	16.7						
13⅓ cents	11	16.3											4	4.3
14½ cents													1	1.1
15 cents	6	8.8												
16⅔ cents	5	7.3											7	7.6
18⅔ cents			2	4.7									3	3.3
20 cents	27	39.7	3	7.0	12	44.5					1	2.0	38	41.3
22 cents									1	.6				
24 cents			1	2.3										
25 cents	2	2.9	23	53.5	2	7.4	4	66.6	120	75.0			33	35.8
26 cents													1	1.1
27 cents			1	2.3					4	2.5				
28 cents													1	1.1
30 cents			2	4.6					16	10.0				
33⅓ cents			6	14.0					12	7.5			2	2.2
35 cents									1	.6				
Laborers board themselves	4	5.9			7	25.9					48	98.0		
No data	8	11.8	5	11.6	2	7.4	1	16.7	6	3.8			2	2.2
Totals	68	100.0	43	100.0	27	100.0	6	100.0	160	100.0	49	100.0	92	100.0
Average cost per meal	$0.172		$0.26		$0.18		$0.22		$0.26		$0.20		$0.22	

TABLE XI. Cost of Board in 663 Labor Camps—Concluded.

(Tables cover only camps inspected between July 1, 1915, and January 1, 1916.)

Cost per meal	Mines and quarries	Per-centage	Oil	Per-centage	Railroad	Per-centage	Ranch	Per-centage	Miscel-laneous	Per-centage	Total	Per-centage
9 cents	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	3	.5
10 cents	--------	--------	--------	--------	1	2.8	1	3.2	--------	--------	5	.7
12 cents	--------	--------	--------	--------	3	8.3	--------	--------	--------	--------	7	1.1
13⅓ cents	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	15	2.3
14½ cents	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	1	.1
15 cents	--------	--------	--------	--------	1	2.8	--------	--------	--------	--------	7	1.1
16⅔ cents	2	2.9	--------	--------	--------	--------	5	16.1	--------	--------	19	2.8
18⅔ cents	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	5	.8
20 cents	2	2.9	--------	--------	3	8.3	15	48.4	--------	--------	101	15.3
22 cents	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	1	.1
24 cents	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	1	.1
25 cents	25	36.2	4	5.5	5	13.9	8	25.8	3	30.0	229	34.6
26 cents	--------	--------	--------	--------	--------	--------	--------	--------	4	40.0	5	.7
27 cents	11	16.0	--------	--------	--------	--------	--------	--------	--------	--------	16	2.4
28 cents	--------	--------	5	7.0	--------	--------	--------	--------	--------	--------	6	.9
30 cents	6	8.7	8	11.1	7	19.5	--------	--------	1	10.0	40	6.0
33⅓ cents	16	23.2	48	66.7	--------	--------	--------	--------	--------	--------	84	12.7
35 cents	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	1	.1
Laborers board themselves	4	5.8	--------	--------	15	41.6	--------	--------	--------	--------	78	11.8
No data	3	4.3	7	9.7	1	2.8	2	6.5	2	20.0	39	5.9
Totals	69	100.0	72	100.0	36	100.0	31	100.0	10	100.0	663	100.0
Average cost per meal	$0.28	--------	$0.32	--------	$0.23	--------	$0.20	--------	$0.26	--------	*$0.233	--------

*General average.

TABLE XII. Cost of Lodging.

(Tables cover only camps inspected between July 1, 1915, and January 1, 1916.)

Cost per month	Beet	Percentage	Construction	Percentage	Fruit	Percentage	Grape	Percentage	Highway and grading	Percentage	Hop	Percentage	Lumber	Percentage
$0.25													3	3.2
.50													2	2.2
1.00			1	2.3	1	3.7							4	4.3
1.25			1	2.3										
1.50														
2.00					1	3.7								
2.50														
3.00					1	3.7								
4.00					1	3.7								
4.50			1	2.3									1	1.1
5.00					1	3.7								
No charge for lodging	65	95.6	36	81.8	18	66.7	5	83.3	159	99.4			80	87.0
No charge for camping privilege											49	100.0		
No data	3	4.4	4	9.3	4	14.8	1	16.7	1	.6			2	2.2
Totals	68	100.0	43	100.0	27	100.0	6	100.0	160	100.0	49	100.0	92	100.0

TABLE XII. Cost of Lodging—Concluded.

(Tables cover only camps inspected between July 1, 1915, and January 1, 1916.)

Cost per month	Mines and quarries	Per-centage	Oil	Per-centage	Railroad	Per-centage	Ranch	Per-centage	Miscel-laneous	Per-centage	Total	Per-centage
$0.25	1	1.4									4	.60
.50	2	2.9									4	.60
1.00	3	4.4									9	1.36
1.25											1	.15
1.50									1	10.0	1	.15
2.00											1	.15
2.50	1	1.4									1	.15
3.00											1	.15
4.00											1	.15
4.50											2	.31
5.00	3	4.4									4	.60
No charge for lodging	58	84.1	65	90.3	36	100.0	31	100.0	7	70.0	560	84.47
No charge for camping privilege											49	7.39
No data	1	1.4	7	9.7					2	20.0	25	3.77
Totals	69	100.0	72	100.0	36	100.0	31	100.0	10	100.0	663	100.0

TABLE XIII. Countries to Which Laborers Send Part of Their Earnings and the Number of Camps From Which the Earnings Are Sent.

(Tables cover only camps inspected between July 1, 1915 and January 1, 1916.)

	Beet	Construction	Fruit	Grape	Highway and grading	Hop	Lumber	Mines and quarries	Oil	Railroad	Ranch	Miscellaneous	Total	Percentage
Armenia								1					1	.66
Austria					5		7	4		1			17	11.35
Bulgaria											1		1	.66
China						2							2	1.32
Corea						1							1	.66
Denmark	1												1	.66
Finland							2						2	1.32
Germany		1											1	.66
Greece							1			2			3	2.00
India	3												3	2.00
Italy			1		12	1	32	14		7			67	44.70
Japan	13		2			1				1			17	11.35
Mexico			1		6			1		2			10	6.67
Philippine Islands	1												1	.66
Portugal							2	5					7	4.67
Serbia								1					1	.66
Spain			2				1	2					5	3.35
Sweden							8			1			9	6.00
Switzerland											1		1	.66
Totals	18	1	6		23	5	53	28		14	2		150	100.0
*Number of laborers who sent earnings "home"	157	3	28		89	97	38	340		46	4		802	

*Actual number of laborers who sent money "home" could be obtained in only a few cases.

TABLE XIV. Location of Camps With Reference to Schools.

(Tables cover only camps inspected between July 1, 1915, and January 1, 1916.)

	Beet	Per-centage	Con-struction	Per-centage	Fruit	Per-centage	Grape	Per-centage	Highway and grading	Per-centage	Hop	Per-centage	Lumber	Per-centage
*Nearest public school—														
Under 1 mile	18	26.5	17	39.5	12	44.5			58	36.2	14	28.6	24	26.0
1 mile to 2 miles	16	23.5	2	4.7	10	37.0	1	16.7	31	19.4	8	16.3	9	9.8
2 miles to 3 miles	10	14.7	8	18.6	1	3.7	4	66.7	27	16.9	10	20.4	12	13.0
3 miles to 5 miles	10	14.7	5	11.6	1	3.7			18	11.2	9	18.3	11	12.0
5 miles to 10 miles	2	2.9	2	4.7					10	6.3	5	10.3	11	12.0
Over 10 miles			2	4.7							3	6.1	25	27.2
No data	12	17.7	7	16.3	3	11.1	1	16.6	16	10.0				
Totals	68	100.0	43	100.0	27	100.0	6	100.0	160	100.0	49	100.0	92	100.0
*Nearest private school—														
Under 5 miles			14	32.6	6	22.2	2	33.3	18	11.2	27	55.2	1	1.1
5 to 10 miles	1	1.5	1	2.3	2	7.4	2	33.3	5	3.1	11	22.4		
Over 10 miles			2	4.7					6	3.8	9	18.3	8	8.7
No private schools	54	79.4	20	46.5	16	59.3	1	16.7	111	69.4	2	4.1	81	88.0
No data	13	19.1	6	13.9	3	11.1	1	16.7	20	12.5			2	2.2
Totals	68	100.0	43	100.0	27	100.0	6	100.0	160	100.0	49	100 0	92	100.0

TABLE XIV. Location of Camps With Reference to Schools—Concluded.

(Tables cover only camps inspected between July 1, 1915, and January 1, 1916.)

	Mines and quarries	Per-centage	Oil	Per-centage	Railroad	Per-centage	Ranch	Per-centage	Miscel-laneous	Per-centage	Totals	Per-centage
*Nearest public school—												
Under 1 mile	24	34.8	38	52.8	21	58.3	7	22.6	6	60.0	239	36.0
1 mile to 2 miles	11	16.0	19	26.4	4	11.1	5	16.1	1	10.0	117	17.7
2 miles to 3 miles	7	10.1	11	15.3	1	2.8	4	12.9	2	20.0	97	14.6
3 miles to 5 miles	8	11.6	4	5.5	4	11.1	8	25.8	1	10.0	79	11.9
5 miles to 10 miles	10	14.5					3	9.7			43	6.5
Over 10 miles	3	4.3			1	2.8					34	5.1
No data	6	8.7			5	13.9	4	12.9			54	8.2
Totals	69	100.0	72	100.0	36	100.0	31	100.0	10	100.0	663	100.0
*Nearest private school—												
Under 5 miles	7	10.3	36	50.0	4	11.1	6	19.4	3	30.0	124	18.7
5 miles to 10 miles	4	5.8	7	9.7	1	2.7	4	12.9	1	10.0	39	5.8
Over 10 miles			14	19.5			1	3.2	1	10.0	41	6.2
No private schools	49	71.0	14	19.5	22	61.2	16	51.6	4	40.0	390	58.9
No data	9	12.9	1	1.4	9	25.0	4	12.9	1	10.0	69	10.4
Totals	69	100.0	72	100.0	36	100.0	31	100.0	10	100.0	663	100.0

*Distances to school given even though no children in camp on date of inspection.

TABLE XV. School Attendance, Classes for Instruction of Children and Adults, and Number of Illiterates.

(Tables cover only camps inspected between July 1, 1915, and January 1, 1916.)

	Beet	Percentage	Construction	Percentage	Fruit	Percentage	Grape	Percentage	Highway and grading	Percentage	Hop	Percentage	Lumber	Percentage
Number of camps from which children attend school	2	8.7	3	50.0	6	75.0	--------	--------	1	6.2	9	37.5	20	35.8
Number of camps from which children do not attend school	3	13.1	2	33.3	--------	--------	--------	--------	4	25.0	14	58.3	16	28.6
Number of camps in which children are below school age	15	65.2	1	16.7	2	25.0	--------	--------	5	31.3	1	4.2	20	35.8
No data	3	13.0	--------	--------	--------	--------	--------	--------	6	37.5	--------	--------	--------	--------
Totals (equal to number of camps with children)	23	100.0	6	100.0	8	100.0	--------	--------	16	100.0	24	100.0	56	100.0
Camps with classes for instruction of children or adults	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	3	3.3
Camps with no classes for instruction of children or adults	56	82.3	37	86.1	24	88.9	5	83.3	148	92.5	49	100.0	89	96.7
No data	12	17.7	6	13.9	3	11.1	1	16.7	12	7.5	--------	--------	--------	--------
Totals	68	100.0	43	100.0	27	100.0	6	100.0	160	100.0	49	100.0	92	100.0
Camps in which some laborers could neither read nor write	12	17.6	7	16.3	4	14.8	--------	--------	31	19.4	18	36.8	2	2.2
Camps in which all laborers could read or write	41	60.3	27	62.8	16	59.3	5	83.3	93	58.1	28	57.1	40	43.5
No data	15	22.1	9	20.9	7	25.9	1	16.7	36	22.5	3	6.1	50	54.3
Totals	68	100.0	43	100.0	27	100.0	6	100.0	160	100.0	49	100.0	92	100.0
Number of illiterates (actual numbers not available in many camps)	120	12.6	27	2.7	85	8.9	--------	--------	180	18.9	301	31.6	11	1.6

TABLE XV. School Attendance, Classes for Instruction of Children and Adults, and Number of Illiterates—Concluded.

(Tables cover only camps inspected between July 1, 1915, and January 1, 1916.)

	Mines and quarries	Per-centage	Oil	Per-centage	Railroad	Per-centage	Ranch	Per-centage	Miscel-laneous	Per-centage	Totals	Per-centage
Number of camps from which children attend school	23	60.5	45	84.9	7	58.3	3	37.5	6	100.0	125	50.0
Number of camps from which children do not attend school	8	21.0	3	5.7	3	25.0	----	----	----	----	53	21.2
Number of camps in which children are below school age	5	13.2	5	9.4	1	8.35	5	62.5	----	----	60	24.0
No data	2	5.3	----	----	1	8.35	----	----	----	----	12	4.8
Totals (equal to number of camps with children)	38	100.0	53	100.0	12	100.0	8	100.0	6	100.0	250	100.0
Camps with classes for instruction of children or adults	1	1.4	----	----	1	2.8	----	----	----	----	5	.7
Camps with no classes for instruction of children or adults	60	87.0	72	100.0	27	75.0	26	83.9	10	100.0	603	91.0
No data	8	11.6	----	----	8	22.2	5	16.1	----	----	55	8.3
Totals	69	100.0	72	100.0	36	100.0	31	100.0	10	100.0	663	100.0
Camps in which some laborers could neither read nor write	5	7.2	1	1.4	13	36.1	6	19.4	1	10.0	100	15.1
Camps in which all laborers could read or write	48	69.6	71	98.6	9	25.0	17	54.8	8	80.0	403	60.9
No data	16	23.2	----	----	14	38.9	8	25.8	1	10.0	160	24.0
Totals	69	100.0	72	100.0	36	100.0	31	100.0	10	100.0	663	100.0
Number of illiterates (actual numbers not available in many camps)	9	.9	30	3.1	105	11.0	43	4.5	40	4.2	951	100.0

TABLE XVI. Speaking Knowledge of the English Language Among Foreign Born Adults and Their Children.

(Tables cover only camps inspected between July 1, 1915 and January 1, 1916.)

	Foreign born adults											Children of foreign born parents											
	Number of foreign born adults who could not speak English	Number of camps housing foreign born adults who could not speak English	Percentage	Number of camps in which all foreign born adults speak English	Percentage	Number of camps housing no foreign born adults	Percentage	Number of camps giving no returns on preceding subjects	Percentage	Total number of camps	Percentage	Number of children who could not speak English	Number of camps housing children of foreign born parents	Percentage	Number of camps in which all children of foreign born parents speak English	Percentage	Number of camps housing no children of foreign born parents	Percentage	Number of camps giving no returns on preceding subjects	Percentage	Total number of camps in which children were housed	Percentage
Beet	430	32	47.1	24	35.3	2	2.9	10	14.7	68	100.0	66	16	69.6	4	17.4	------	------	3	13.0	23	100.0
Construction	1[illegible]2	8	18.6	19	44.2	11	25.6	5	11.6	43	100.0	6	1	16.7	5	83.3	------	------	------	------	6	100.0
Fruit	173	7	25.9	15	55.6	3	11.1	2	7.4	27	100.0	------	------	------	7	87.5	------	------	1	12.5	8	100.0
Grape	------	------	------	4	66.7	2	33.3	------	------	6	100.0	------	------	------	------	------	------	------	------	------	------	100.0
Highway and grading	[illegible]38	47	29.4	91	56.8	14	8.8	8	5.0	160	100.0	------	------	------	8	50.0	6	37.5	2	12.5	16	100.0
Hop	2,056	32	65.3	3	6.1	14	28.6	------	------	49	100.0	122	8	33.3	7	29.1	9	37.6	------	------	24	100.0
Lumber	18	7	7.6	78	84.7	4	4.4	3	3.3	92	100.0	------	------	------	52	92.9	4	7.1	------	------	56	100.0
Mines and quarries	365	2	34.8	30	43.5	6	8.7	9	13.0	69	100.0	------	1	2.6	33	86.8	2	5.3	2	5.3	38	100.0
Oil	35	1	1.4	25	34.7	46	63.9	------	------	72	100.0	------	------	------	1	1.9	51	96.2	1	1.9	53	100.0
Railroad	422	23	63.9	9	25.0	1	2.8	3	8.3	36	100.0	12	3	25.0	5	41.7	------	------	4	33.3	12	100.0
Ranch	173	7	22.6	16	51.6	5	16.1	3	9.7	31	100.0	25	3	37.5	5	62.5	------	------	------	------	8	100.0
Miscellaneous	89	2	20.0	8	80.0	------	------	------	------	10	100.0	------	------	------	5	83.3	------	------	1	16.7	6	100.0
Totals	4,371	190	28.6	322	48.6	108	16.3	43	6.5	663	100.0	2[illegible]	32	12.8	132	52.8	72	28.8	14	5.6	250	100.0

TABLE XVII. Number of Different Laborers Hired Each Month to Maintain Required Crew. (Turn—Over.)

(Tables cover only camps inspected between July 1, 1915 and January 1, 1916.)

	Total number of camps	Number of camps from which data was available	Number of laborers required during the working period or season	Number of different laborers hired each month during the working period to maintain the number of laborers required	Percentage of the working force which dropped out and had to be replaced each month during the working period
Beet	68	44	1,346	445	33.1
Construction	43	34	1,917	864	45.0
Fruit	27	22	2,088	232	11.1
Grape	6	4	60	6	10.0
Highway and grading	160	122	4,222	3,291	78.0
Hop	49	39	5,007	556	9.1
Lumber	92	79	5,791	705	12.2
Mines and quarries	69	45	2,977	456	15.3
Oil	72	69	3,109	15	.48
Railroad	36	28	783	796	101.7
Ranch	31	24	671	336	50.1
Miscellaneous	10	6	708	90	12.7
Totals	663	516	28,679	7,792	27.2

TABLE XVIII. Summary of Reinspection Returns on 118 Labor Camps.

(Tables cover only camps inspected between July 1, 1915 and January 1, 1916.)

	Number of camps	Per cent
Number of camps showing improvement—		
From bad to good	11	9.3
From bad to fair	11	9.3
From fair to good	23	19.5
*From good to better	38	32.3
Totals	83	70.4
Number of camps showing no improvement—		
1. Stayed same as when first inspected:		
Bad	8	6.8
Fair	9	7.6
Totals	17	14.4
2. Retrograded—		
From good to fair	5	4.2
From good to bad	4	3.4
From fair to bad	9	7.6
Totals	18	15.2
Grand totals	118	100.0
Number of camps which not only show improvement, but which have been brought up to the minimum standard set by the Commission—		
From bad to good	11	9.3
From fair to good	23	19.5
From good to better	38	32.3
Totals	72	61.1

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*On first inspection these camps were classed good. On reinspection it was found that minor suggestions made by the Commission had been put into effect.

APPENDIX A.

Act Creating the Commission of Immigration and Housing of California.

CHAPTER 318.

An act relating to immigrants and immigration, creating a commission of immigration and housing, providing for the employment by said commission of a secretary, agents and other employees, authorizing said commission to fix their compensation, prescribing the duties of said commission, providing for the investigation by said commission of all things affecting immigrants, and for the care, protection and welfare of immigrants, and making an appropriation for the purpose of carrying out the provisions hereof.

[Approved June 12, 1913. Section 10 amended in 1915.]

The people of the State of California do enact as follows:

SECTION 1. Within thirty days after this act shall go into effect, the governor of the state shall appoint five suitable persons to act as commissioners of immigration and housing. Said commissioners shall hold office and serve solely at the pleasure of the governor and not otherwise.

SEC. 2. Said commissioners shall serve without compensation, but shall be entitled to receive from the state their actual necessary expenses while traveling on the business of the commission, either within or without the State of California.

SEC. 3. The commission shall be known as the "commission of immigration and housing of California." It shall have a seal for the authentication of its orders and proceedings upon which shall be inscribed the words "commission of immigration and housing—California—seal." Each member of the commission, before entering upon the duties of his office, shall take the oath of office as prescribed by the Political Code for state officers in general, and must execute an official bond in the sum of five thousand dollars. Within thirty days after appointment, the commission shall meet at the state capitol and organize, selecting a president, a vice-president and a secretary. A majority of the commission shall constitute a quorum for the exercise of the powers or authority conferred upon it. Whenever a vacancy occurs in the commission, from any cause whatsoever, such vacancy shall be filled by the governor, as provided in section one for the original creation of the commission. In case of a vacancy, the remaining members shall exercise all the powers and authority of the commission until such vacancy is filled. The commission shall maintain its headquarters and principal office in the city and county of San Francisco, and may establish branch offices at any place or places which in the judgment of the commission may be deemed advisable. The commission may, however, hold sessions at any place other than its offices when the convenience of the commission and the parties interested so requires.

SEC. 4. For the purpose of carrying out the provisions of this act, the said commission is authorized to employ such expert and other employees as it may deem necessary, and upon such terms and for such compensation as it may deem proper. The said commission shall have power to enter into contracts of employment with such persons as it may desire to employ for a definite period of time; but no contract shall be made for more than one year. The employees of the commission shall be entitled to receive from the state their actual necessary expenses while traveling on the business of the commission, either within or without the State of California.

SEC. 5. The commission of immigration and housing shall have the power to make full inquiry, examination and investigation into the condition, welfare and industrial opportunities of all immigrants arriving and being within the state. The commission shall also gather information as to the agricultural possibilities and opportunities for settlement on land within the state; such information to include soil and agricultural surveys of the arable land within the state and other data relating to the price and productivity of land. The commission shall also have power to collect information with respect to the need and demand for labor by the several agricultural, industrial and other productive activities, including public works, within the state; to gather information with respect to the supply of labor afforded by such immigrants as they shall from time to time arrive or be within the state; to ascertain the occupations for which such immigrants shall be best adapted, and to bring about intercommunication between them and the several activities requiring labor which will best promote their respective needs; to investigate and determine the genuineness of any application for labor that may be received and the treatment accorded to those for whom employment shall be secured; to cooperate with the state employment bureaus, municipal employment bureaus, and with private employment agencies within the state, and also with the employment and immigration bureaus conducted under the authority of the federal government or by the government of any other state, and with public and philanthropic agencies designed to aid in the distribution and employment of immigrants; and to devise and carry out such other suitable methods as will tend to prevent or relieve congestion and obviate unemployment; and to collect and publish, in English or foreign languages, for distribution among immigrants, in, or embarked for, California, such information as is deemed essential to their protection, distribution, education and welfare; and said commission is hereby empowered and authorized to have printed by the state printer any such reports or information, records or proceedings as it may deem necessary or proper; and if for any reason the state printer is not equipped to do any part of said work, then the said commission shall have the right and the authority to have the same done elsewhere upon such terms and conditions as it may deem proper.

SEC. 6. The commission shall cooperate with the proper authorities and organizations, federal, state, county, municipal and private, with the object in view of bringing to the immigrant the best opportunities for acquiring education and citizenship. To that end it shall procure from, or with the consent of, the federal authorities, complete lists giving the names, ages and destination within the state of all immigrant children of school age, and such other facts as will tend to identify them, and shall forthwith deliver copies of such lists to the superintendent of public instruction or the several boards of education and school boards in the respective localities within the state to which said children shall be destined, to aid in the enforcement of the provisions of the education law relative to the compulsory attendance at school of children of school age. The commission shall further cooperate with the superintendent of public instruction and with the several boards of education in the state to ascertain the necessity for and the extent to which instruction should be imparted to immigrants within the state and to devise methods for the proper instruction of adult and minor aliens in the English language and other subjects; and in respect to the duties and rights of citizenship and the fundamental principles of the American system of government; and shall cooperate with the proper authorities and with private agencies to put into operation practical devices for training for citizenship and for encouraging naturalization. It shall be the aim to communicate this instruction to the immigrant as soon after his arrival as is practicable. The commission shall cooperate with the proper authorities to extend this education for both children and adults to labor camps and other localities from which the regular schools are not easily accessible. The commission in cooperation with the proper authorities and organizations shall encourage the establishment of playgrounds and other recreational activities, and also the establishment of settlements and social centers in cities and towns.

SEC. 7. With the object in view of rendering to the immigrant that protection to which they are entitled, the commission of immigration and housing may inspect all labor camps within the state, and may inspect all employment and contract agencies dealing with immigrants or who secure or negotiate contracts for their employment within the state; may investigate the banking relations that exist between immigrants and laborers; may investigate and inspect institutions established for the temporary shelter and care of immigrants and such philanthropic societies as shall be organized for the purpose of securing employment for or aiding in the distribution of immigrants, and the methods by which they are conducted; and shall investigate housing conditions under which immigrants live, and sanitary and safety conditions under which immigrants are employed; it shall further investigate conditions prevailing at the various places where immigrants are landed within the state and at the several docks, ferries, railway stations, and on trains and boats therein, and shall investigate any and all complaints with respect to frauds, extortion, incompetency and improper practices by notaries public and other public officials; it shall further investigate the relations existing between immigrants and steamship and railway ticket agents, hotel runners, cab men, baggage men, interpreters and pawn brokers; it shall further investigate the dealings carried on between immigrants and real estate firms or corporations; and as the result of any of the above inspections or investigations, if it should find evidences of fraud, crime, extortion, incompetency, improper practices or exploitation, it shall be the duty of the commission of immigration and housing to present to the proper authorities the evidences for action thereon, and shall bring to bear all the authority within its power to see that justice is rendered. The commission shall also encourage the establishment of legal aid societies.

Sec. 8. With the further object in view of bringing to the immigrant the best protection the state can afford, it shall be the duty of the commission to call to the attention of the proper authorities any violations it may discover of the laws pertaining to the payment of wages, to the mode of paying, pertaining to the child labor laws, the employment of women, factory inspection laws, weekly day of rest laws, protection of labor under building laws, protection of labor under public works laws, laws relating to the white slave traffic, and laws of the state and county and municipal health departments; the tenement house laws, and other laws pertaining to housing conditions. The commission shall investigate and study the general economic, housing and social conditions of immigrants within the state, for the purpose of inducing remedial action by the various agencies of the state possessing requisite jurisdiction; and shall generally, in conjunction with existing public and private agencies, consider and devise means to promote the welfare of the state. The members of the commission of immigration and housing or any of their authorized agents shall have the right to enter into tenement houses, buildings and dwelling places for the purpose of inspecting such houses, buildings, and dwelling places to secure compliance with state tenement and building acts and municipal building ordinances and to prevent violation thereof, and shall have the right to examine the records of the various city departments charged with the enforcement of the tenement house law and other building regulations and to secure from them reports and copies of their records at any time.

Sec. 9. The commission shall have the right to demand of all officials, state, county and municipal, and it shall be the duty of said officials to supply, such information and references to records as will enable the commission to carry into effect the provisions and intent of this act; and shall have the right to enter upon private property to make investigation for the purposes of carrying out the provisions of this act. For the purpose of carrying out fully the intent and spirit of this act, the said commission shall have full power and authority to gather any and all such evidence as it may deem proper and necessary in order to present the same to the proper authorities for the purpose of instituting prosecutions against any and all persons, firms or corporations found violating any of the laws of any municipality, county or of the state or of the federal government, concerning any of the matters in this act referred to.

Sec. 10. For the purpose of carrying out to the fullest extent the provisions hereof, the said commission or any member thereof shall have power to hold hearings for the purpose of investigation and inquiry, and for the purpose of reaching an amicable settlement of controversies existing between persons, firms and corporations mentioned herein; and to this end and purpose, the said commissioners said commission, are hereby authorized and empowered to subpœna witnesses to appear at such hearings and to administer oaths. No decision shall be deemed to be final until ratified and approved by the said commission and filed in its office.

Sec. 11. For the purposes of this act, the words immigrant and immigration shall refer to any alien who is within the state, either permanently or temporarily domiciled here, or in transit, or passing through the state to a contiguous state or territory; said words shall further refer to any alien who may first have taken up residence in some other state or in one of the federal territorial possessions, and then shall have removed to this state; said words shall further refer to all aliens coming to and being within the State of California. For the purpose of this act, the word alien shall refer to all persons who are not native born or who have not received their final citizenship papers under the naturalization laws of the United States.

Sec. 12. This act shall not be construed to authorize or direct the commission of immigration and housing to induce or encourage immigration into this state or the United States.

Sec. 13. The commission of immigration and housing shall make an annual report to the governor, on the second day of January, of the operation of the commission.

Sec. 14. The sum of fifty thousand dollars is hereby appropriated out of any moneys in the state treasury not otherwise appropriated, for the purpose of carrying out the provisions of this act; and the state controller is hereby authorized and directed to draw warrants upon such sum, from time to time, upon the requisition of said commission, approved by the board of control; and the state treasurer is hereby authorized and directed to pay such warrants.

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THIRTY-FIRST ANNUAL REPORT

OF THE

Board of Dental Examiners

OF THE

STATE OF CALIFORNIA

California
State Printing Office
1916

21704

MEMBERS OF THE BOARD OF DENTAL EXAMINERS OF THE STATE OF CALIFORNIA—1916.

F. H. HOUCK, D.D.S., *President*	Anaheim
L. T. CORWIN, D.D.S., *Vice President*	Oakland
C. A. HERRICK, D.D.S., *Secretary,*	401 Whitney Bldg., San Francisco
J. M. BLODGETT, D.D.S.	Lodi
C. E. RICE, D.D.S.	Los Angeles
L. R. SEVIER, D.D.S.	Los Angeles
A. E. HACKETT, D.D.S.	San Francisco

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Thirty-first Annual Report

OF THE

Board of Dental Examiners

OF THE

State of California

TO THE

Governor of California

December 1, 1915

MEMBERS OF THE BOARD OF DENTAL EXAMINERS OF THE STATE OF CALIFORNIA—1915.

C. E. RICE, D.D.S., *President*	Los Angeles
F. H. HOUCK, D.D.S., *Vice President*	Anaheim
C. A. HERRICK, D.D.S., *Secretary*	San Francisco
J. M. BLODGETT, D.D.S.	Lodi
L. D. JONES, D.D.S.	San Diego
L. T. CORWIN, D.D.S.	Oakland
A. E. HACKETT, D.D.S	San Francisco

THIRTY-FIRST ANNUAL REPORT

OF THE

BOARD OF DENTAL EXAMINERS OF CALIFORNIA.

To his Excellency, HIRAM W. JOHNSON,

Governor of California.

SIR: The Board of Dental Examiners of California has the honor of submitting the following as the thirty-first annual report of its proceedings, together with an account of all moneys received and disbursed, in compliance with the requirements of that certain act of the legislature approved May 21, 1915, entitled: "An act to insure the better education of dental surgeons and to regulate the practice of dentistry in the State of California, providing penalties for the violation hereof."

Since December 1, 1914, the Board has held three meetings for the purpose of examining applicants for a license to practice dentistry, and ten monthly meetings for the transaction of routine business.

At the first examination held in San Francisco in December, 1914, forty-seven applicants were examined and the following thirty-six were successful and were granted licenses:

Arnold, J. R.
Baba, S. H.
Collins, C. E.
Foley, C. L.
Fortgang, J.
Galloway, J. F.
Horner, L. F.
Henry, G. W.
Kaiser, F. S.
Koenecke, H. J.
Mitchell, Ralph
Morris, R. C.
Marlow, G. C.
Nixon, C. E.
Prather, A. C.
Shuin, M.
Torassa, G. L.
Weaver, K. K.
Baptist, J. F.
Brighouse, A.
English, M. H.
Fein, C. B.
Goodwin, J. H.
Goodson, L. J.
Hill, C. E.
Jackson, O. E.
Korf, J.
Lupfer, W. C.
Moore, J. F.
Moss, A. E.
Monfort, J. B.
Pryor, C. E.
Rankin, S. H.
Sherman, W. A.
Walter, C. F.
Wertzberger, H. J.

At this meeting the following officers were elected: President, Dr. C. E. Rice, of Los Angeles; Secretary, Dr. C. A. Herrick, of San Francisco.

The next examination was held in San Francisco, beginning on June 12th, at which time there were sixty-seven applicants, and the following fifty-five were successful:

Anderson, W. R.
Agern, A. C.
Bachler, H. C.
Bell, E. W.
Bettencourt, F. C.
Bisson, F., Jr.
Brown, C. E.
Cerf, R. M.
Clark, H. L.
Clemmens, H.
Codoni, L. R.
Cohen, S. M.
Conly, T. W.
Cooper, C. W.
Dyberg, H.
Erno, H. C.
Goursolle, N. T.
Greenlaw, C. E.
Hagan, J. W.
Hall, W. P.
Hamner, K.
Harris, C. B.
Hatfield, C. T.
Hayashi, Y.
Idomoto, Y.
Ito, F. H.
Joslyn, W. E.
Keene, F. G.
Kimball, E. W.
Leek, L. L.
Lough, J. C.
Mathieu, H. J.
Middleton, G. W.
Moose, S. M.
Namura, T.
Neff, B. G.
Ney, M. E.
Roberts, C. A.
Rothenberg, I.
Rudee, M. C.
Schramm, W. C.
Schwarz, W. P.
Shoemaker, H. O.
Skelly, E.
Smith, A. J.
Smith, J. W.
Smith, W. S.
Spare, H. I.
Stoodley, G. F.
Tanner, M. M.
Walker, L. A.
Weston, H.
White, E. H.
Williams, J. E.
Wyatt, C. W.

An examination in Los Angeles, beginning on June 18th, followed the one in San Francisco.

At this examination there were eighty-five applicants and seventy-five were successful, as follows:

Aloojian, Geo.
Amo, F. P.
Andrews, R. H.
Bardellini, D. A.
Bell, R. F.
Benton, G. C.
Bigness, F. H.
Blackman, J. G.
Block, H.
Boland, W. H.
Branch, F. M.
Brown, V. H.
Brown, A. S.
Brown, Hugh
Butler, R. R.
Chisholm, F. R.
Cobb, L. A.
Cobb, W. B.
Codling, H. G.
Crane, C. W.
Criger, H. F.
Derby, W. S.
Dodge, F. E.
England, D. L.
Fisher, W. L.
Fuessel, G. B.
Giberson, W. W.
Gibbons, J.
Gessard, G. C.
Gray, H. S.
Hammar, G. L.
Hancock, A. E.
Hayward, R. W.
Henry, G. E.
Higgason, J. C.
Hill, G. E.
Hodges, L. E.
Jordan, B. A.
Kaiser, O. V.
Kleinberg, J.
Kerch, K.
Kimball, F. I.
Leisure, G. C.
Long, L. C.
Lufkin, A. W.
MacDonald, C. A.
MacDonald, R. F.
Mitchell, F. L.
Moss, A. K.
McKellar, S. L.
Neelands, W. J.
Okuyoshi, I.
Osher, J. C.
Parker, C. S.
Peterson, R. C.
Reese, P. S.
Rice, G. F.
Rosenbaum, A. M.
Rowland, C. W.
Ruddy, L. M.
Sarkisian, H. M.
Schildwachter, L. C.
Shaffer, H. M.
Smith, G. W.
Smith, W. H.
Snipes, C. L.
Sorensen, H. W.
Stewart, A. B.
Stone, H. C.
Swartz, R.
Underhill, E. C.
Van Winkle, W. D.
Wake, C. H.
Wassman, Max, Jr.
Wright, A. H.

During the year, the Board has restored two licenses which had been forfeited for failure to register the same with the county clerk within the prescribed time, and has issued three duplicate licenses.

The Board has also issued forty-one new licenses under the provisions of section 14 of the dental law, act of 1901, and has restored five licenses under the provisions of section 9 of the dental law, act of May 21, 1915. These licenses had been forfeited by failure to pay the annual license fee of two dollars.

In August, following the enactment of the new dental law, the Board held an election of officers to serve until the regular election in December. Dr. C. E. Rice, of Los Angeles, was elected president; Dr. F. H. Houck, of Anaheim, was elected vice president; and Dr. C. A. Herrick, of San Francisco, was elected secretary.

The following is a report of the prosecutions in different parts of the State during the year, together with a report of the hearings of charges of unprofessional conduct, which have been conducted by the Board.

PROSECUTIONS.

Alameda County.

People vs. *M. Utsumi*. Defendant was arrested in October, 1915. After several continuances, the case has been set for trial in the Police Court of the city of Oakland, for January 5, 1916.

Kern County.

People vs. *C. F. Waller*. This case, which was pending at the time of the last report, was dismissed by the court as the defendant had been licensed by the Board during December, 1914.

People vs. *E. R. Victor.* This case was pending at the time of the last report, the defendant having been arrested for practicing without a license, said license having expired by limitation for failure to pay the annual license fee of two dollars.

On January 25, 1915, the defendant made application for a writ of habeas corpus to the Court of Appeal for the Second Appellate District. This writ was made returnable February 8, 1915. The contention was submitted on that day and briefs were thereafter filed. On March 25th, the court decided that the dental practice act is constitutional and valid. The writ was discharged and the petitioner remanded to the custody of the sheriff. Thereafter on July 13, 1915, the case was dismissed on motion of the district attorney of Kern County, the defendant in the meantime having become licensed to practice dentistry by making application for a new license and paying the fee of twenty-five dollars.

Los Angeles County.

People vs. *D. W. Thomas.* This case was pending at the time of filing the last report. On December 12, 1914, the case was dismissed on motion made by the attorney for the Board, upon the ground that the defendant had been convicted of a similar offense.

People vs. *D. W. Thomas* (No. 2). This was a new charge of the same offense as above. The case was tried on December 7, 1914, before a jury in the Police Court of the city of Los Angeles, and defendant was found guilty and sentenced to serve one year in the city jail, but was granted probation, on condition that he refrain from violating the law during a period of two years. Upon appeal to the Superior Court, the judgment of the lower court was affirmed.

People vs. *S. S. Street.* This case was pending at the date of the last report, defendant having appealed from the decision of the Police Court. On April 6, 1915, the Superior Court affirmed the judgment of the conviction in the Police Court.

People vs. *R. A. Stewart.* This case was pending at the date of the last report. It was tried on February 15, 1915, by a jury in the Police Court of Los Angeles. Defendant was found guilty and a fine of one hundred dollars was imposed, which was paid.

People vs. *Nong S. Lee.* Defendant was arrested on January 5, 1915. He pleaded guilty in the Police Court of Los Angeles, and a sentence of 180 days in the city jail was imposed, which sentence was suspended for two years.

People vs. *A. H. Wright.* Defendant was arrested January 18, 1915. He pleaded guilty and was fined one hundred dollars, sentence being suspended for one year.

People vs. *L. M. Ruddy.* Defendant was arrested March 30, 1915. On April 2, 1915, he pleaded guilty in the Police Court of Los Angeles and a sentence of 180 days in the city jail was imposed, which sentence was suspended for two years.

People vs. *C. H. Edgar.* Defendant was arrested April 14, 1915. He pleaded guilty in the Police Court of Los Angeles, and a sentence of a fine of two hundred and fifty dollars, or 180 days in the city jail was imposed, which sentence was suspended for two years.

People vs. *Harold A. Wright.* Defendant was arrested on May 12, 1915. He pleaded guilty in the Police Court of Los Angeles and was fined one hundred dollars, which was paid.

People vs. *M. W. Fox.* On May 18, 1915, a complaint was sworn to and a warrant issued for his arrest, but before the warrant could be served the defendant left the State.

People vs. *W. S. Sylvester.* Defendant was arrested May 24, 1915. He was tried in the Police Court of Los Angeles on June 11, 1915, found guilty and sentenced to pay a fine of one hundred dollars, which was paid.

People vs. *Geo. H. Hayes.* Defendant was arrested on April 8, 1915. On May 28, 1915, the case was dismissed for lack of sufficient evidence.

People vs. *Francis P. Amo.* Defendant was arrested on April 26, 1915. After several continuances, the case was tried on June 2, 1915. Defendant was found guilty and a fine of one hundred dollars was imposed, which fine was paid.

People vs. *Harold Sadler.* A complaint was sworn to May 22, 1915. On August 18, 1915, the case was dismissed by the court.

People vs. *P. S. Rimmer.* Defendant was arrested on April 29, 1915. On May 3d, a preliminary examination was held in the city of Pasadena, and the defendant was held to answer to the Superior Court. On October 27, 1915, defendant pleaded guilty in Department No. 17 of said court and a fine of two hundred dollars was imposed, which fine was paid.

People vs. *R. M. Moore.* Defendant was arrested on September 13, 1915, at Avalon, Catalina Island. He had a preliminary examination in the Justices' Court of the county of Los Angeles, and was held to answer to the Superior Court. On October 25th, the case was set for trial on January 14, 1916.

Merced County.

People vs. *Chas. Foreman.* Defendant was arrested on October 12, 1915. Preliminary examination was held in the Justices' Court on October 20, 1915, and defendant was dismissed.

Monterey County.

People vs. *E. Edwards.* Defendant was arrested on May 6, 1915, in Monterey. After preliminary examination, defendant was held to answer before the Superior Court. On May 21st he pleaded guilty and a fine of one hundred dollars was imposed, which was paid.

Orange County.

People vs. *J. C. Osher.* Defendant was arrested in the city of Anaheim on January 12, 1915. After preliminary examination, defendant was held to answer before the Superior Court. On May 26th the case was tried by Judge West and defendant was found guilty and a fine of one hundred dollars was imposed, which was paid. This case presented a novel issue, the defense being that the defendant was a licensed practitioner of medicine, and that, inasmuch as the dental practice act expressly exempted the practice of oral surgery by physicians from its prohibition, the defendant was permitted by its terms to practice dental surgery, which defendant asserted was within the domain of oral surgery. This contention, however, was overruled, the court declaring that the testimony of the expert witnesses had sufficiently disclosed to the contrary.

San Francisco County.

People vs. *M. Rasnik.* This case was pending at the time of the last report. On December 5, 1914, defendant was held to answer before the Superior Court. On December 23d defendant pleaded guilty and made a motion for probation, which was denied. He was sentenced to serve three months in the county jail. Sentence was suspended.

On March 3, 1915, on information that defendant was again engaged in the practice of dentistry, a motion was made to vacate the order suspending judgment, and defendant was arrested. Upon the hearing of the motion to vacate the order suspending judgment, the same was denied, it being shown that defendant was about to leave the State, which he did.

People vs. *John Doe Lyon.* Complaint was sworn to and warrant issued on May 15, 1915. At all times since said date defendant has been a fugitive from justice. The case is pending.

People vs. *Whalebone Painless Dentists* (a corporation). On June 30, 1915, complaint was sworn to before Judge Crist, in the Police Court, charging said corporation with violating subdivision 9 of section 19, of the dental law. Hearing was held August 12, 1915, and the case was dismissed.

People vs. *Charles H. Strub* (Union Dental Co.). On October 28, 1915, complaint was sworn to in the Police Court, defendant being charged with practicing dentistry under a fictitious name. After the usual preliminaries, on November 13, 1915, said case was ordered on the reserve calendar of said court, it being shown that defendant had, in every respect, complied with the provisions of the law regulating his right to advertise.

People vs. Charles H. Strub (Alveolar Dental Co.). On October 28, 1915, complaint was sworn to in the Police Court, defendant being charged with practicing dentistry under a fictitious name. After the usual preliminaries, on November 13, 1915, said case was ordered on the reserve calendar of said court, it being shown that defendant had, in every respect, complied with the provisions of the law regulating his right to advertise.

People vs. *John Arthur Foster* (Yale Dentists). On October 28, 1915, complaint was sworn to in the Police Court, defendant being charged with practicing dentistry under a fictitious name. After the usual preliminaries, on November 13, 1915, said case was ordered on the reserve calendar of said court, it being shown that defendant had, in every respect, complied with the provisions of the law regulating his right to advertise.

People vs. *Ralph Mitchell* (Yale dentists). On October 28, 1915, complaint was sworn to in the Police Court, defendant being charged with practicing dentistry under a fictitious name. After the usual preliminaries, on November 13, 1915, said case was ordered on the reserve calendar of said court, it being shown that defendant had, in every respect, complied with the provisions of the law regulating his right to advertise.

People vs. *Harrison H. Keene* (Eureka Dental Co.). On October 28, 1915, complaint was sworn to in the Police Court, defendant being charged with practicing dentistry under a fictitious name. After the usual preliminaries, on November 13, 1915, said case was ordered on the reserve calendar of said court, it being shown that defendant had, in every respect, complied with the provisions of the law regulating his right to advertise.

People vs. *Frederick Sylsbee Barber* (Union Dental Co.). On October 28, 1915, complaint was sworn to in the Police Court, defendant being charged with practicing dentistry under a fictitious name. After the usual preliminaries, on November 13, 1915, said case was ordered on the reserve calendar of said court, it being shown that defendant had in every respect, complied with the provisions of the law regulating his right to advertise.

San Joaquin County.

People vs. *H. Kushiyama.* Defendant was practicing dentistry without a license at Stockton. Upon learning that a warrant had been issued for his arrest, he surrendered himself. On November 29th, he pleaded guilty in the Superior Court, and was fined one hundred dollars, which he paid.

San Bernardino County.

People vs. *Arthur W. McDavitt.* Defendant was arrested on October 19, 1915, in the city of San Bernardino. After preliminary examination, defendant was held to answer before the Superior Court. The case is pending.

People vs. *H. P. Swain.* Defendant was arrested on August 31, 1915, at Upland. After preliminary examination, he was held to answer before the Superior Court. On September 29th he pleaded guilty and sentence was suspended for six months to give defendant an opportunity to take the examination before the Board.

San Diego County.

People vs. *N. Busbee.* Defendant was arrested on September 13, 1915. On October 21, 1915, preliminary examination was had and defendant was held to answer before the Superior Court. The case is pending.

People vs. *George H. Harlin.* Defendant was arrested October 27, 1914. He was held to answer before the Superior Court. He pleaded guilty in said court, but sentence was suspended for six months on condition that defendant refrain from violating the law.

Santa Cruz County.

People vs. *Darius Burtch.* On August 21, 1915, complaint was sworn to before the justice of the peace at Watsonville, and warrant issued. On September 1, 1915, said matter came on for hearing and was submitted upon the briefs to be filed by the respective parties.

On October 25, 1915, brief on behalf of the people was filed and on November 10, 1915, the case was dismissed, the justice of the peace holding that the defendant, a duly and regularly licensed physician and surgeon, by virtue of his said certificate, has the right to practice dentistry in the State of California.

HEARINGS OF CHARGES OF UNPROFESSIONAL CONDUCT.

R. C. Anderson vs. *Board of Dental Examiners* (District Court of Appeal). At the time of the last report this matter was still pending in the District Court of Appeal and was orally argued and submitted before said court on February 23, 1915. On May 6, 1915, the petition for writ of review from the judgment of the Board of Dental Examiners of California, suspending the license of said R. C. Anderson, was denied by said court.

W. P. Meyer vs. *Board of Dental Examiners of California.* At the time of filing the last report W. P. Meyer had instituted proceedings to review the action and judgment of the Board in revoking his license. The matter was finally disposed of on March 25, 1915, by Judge Reeve, of the Superior Court of Los Angeles, who overruled the action of the Board.

In the Matter of the Accusation Against W. E. Hutchason. On October 9, 1914, written verified accusation was filed against W. E. Hutchason, charging him with unprofessional conduct. The matter came on for hearing before the Board on June 17, 1915, in the city of Los Angeles. The accused entered a plea of guilty and asked for leniency on the part of the Board. The Board suspended the license of W. E. Hutchason for a term of one year. Thereafter, W. E. Hutchason secured a writ of certiorari from the Superior Court of Los Angeles County to review the proceedings of the Board. The hearing upon said writ of certiorari was held on November 22, 1915, and the case submitted to the court. Decision has not been rendered as yet.

In the Matter of the Accusation Against J. F. Steele. On October 9, 1914, written verified accusation was filed against J. F. Steele, charging him with unprofessional conduct. The hearing of said charge was set for March 2, 1915, and the date of said hearing thereafter advanced to June 16, 1915. Because of the inability to serve a copy of the accusation and the order fixing the time and place of hearing upon said J. F. Steele, no further proceedings were had in the matter.

In the Matter of the Accusation Against F. W. Chandler. On May 15, 1915, written verified accusation was filed against F. W. Chandler, charging him with unprofessional conduct. Said matter came on for hearing before the Board on June 2, 1915.

Upon the termination of the trial thereof, judgment was rendered finding the accused guilty of unprofessional conduct and ordering his license suspended for the period of ten days thereafter.

In the Matter of the Accusation Against K. W. Messner. On November 20, 1915, written verified accusation was filed charging K. W. Messner with unprofessional conduct. The date for the hearing of same has been set for December 8, 1915.

FINANCIAL STATEMENT.

The following is an account of all moneys received and disbursed during the year:

General Fund.

December 1, 1914, balance on hand		$6,017 88
RECEIPTS.		
199 examination fees at $25	$4,975 00	
2 restoration license fees at $25	50 00	
48 applications new license fees and restoration fees (section 9, Act of 1915) at $25	1,200 00	
3 duplicate license fees at $5	15 00	
Fines	500 00	
		6,740 00
		$12,757 88
DISBURSEMENTS.		
Board compensation	$3,080 00	
Traveling expenses of Board members	1,139 95	
Secretary's salary	900 00	
Telephone and postage	295 77	
Printing and stationery	319 71	
Examination expenses	288 85	
Miscellaneous	110 84	
		6,135 12
December 1, 1915, balance on hand		$6,622 76

Registration Fund.

December 1, 1914, balance on hand		$5.275 39
RECEIPTS.		
2467 annual license fees at $2	$4,934 00	
Exchange	70	
		4,934 70
		$10,210 00
DISBURSEMENTS.		
Secretary's salary	$900 00	
Telephone and postage	117 42	
Printing and stationery	100 85	
Attorney's fees	1,290 00	
Detective and inspector fees	2,368 00	
Expenses of prosecutions	943 27	
Per diem for prosecutions	10 00	
Miscellaneous	81 68	
		5,811 22
December 1, 1915, balance on hand		$4,398 87

All of which is respectfully submitted by the Board of Dental Examiners of California.

CHAS. E. RICE, D.D.S.,
President.

C. A. HERRICK, D.D.S.,
Secretary.

December 1, 1915.

GENERAL INFORMATION.

Those asking for information should send a stamp for reply.

All money paid to the Board should be sent to the Secretary.

Any one failing to receive an official, numbered receipt for money paid will confer a favor by communicating such fact to the Secretary.

The law does not exempt a non-resident or retired dentist from the payment of the annual renewal fee; however, if he does not wish to keep his license valid in California he may omit paying the fee.

Diplomas from dental colleges or licenses from other States give their holders no right to practice dentistry in California without first passing an examination.

California does not interchange licenses with other States.

Each applicant must come prepared to perform any operation in prosthetic or operative dentistry that may be assigned to him. All work must be done in the presence of the Board. Applicants must furnish all necessary instruments, materials, and patients. A complete set of rules and instructions governing the examinations will be given the applicants at the time of the examinations.

Under our present law it is very necessary that the Board should have the correct addresses of all dentists licensed to practice in California, whether they reside in the State or not. The migratory habits of many dentists have made the task of securing change of address a very difficult one. We appeal to every member of our profession to assist the Board in this work.

DENTAL LAW OF CALIFORNIA.

An act to insure the better education of dental surgeons and to regulate the practice of dentistry in the State of California providing penalties for the violation hereof.

[Approved May 21, 1915.]

SECTION 1. It shall be unlawful for any person to engage in the practice of dentistry in the State of California unless such person shall have obtained a license from the board of dental examiners of the State of California, as hereinafter provided, except that the license of any dentist, existing at the time of the passage of this act shall continue in force until forfeited in the manner hereinafter provided and the annual tax paid by any such dentist under the terms of the laws of the State of California existing at the time of the passage of this act shall keep such license in force until the expiration of the time for which the same was paid, and thereafter the holder of such license shall be subject to the annual tax in this act provided. Nothing herein contained shall be construed to exempt from the payment of the annual tax any person authorized to practice dentistry in the State of California, and every person practicing dentistry in this state shall, irrespective of the time when he was licensed or first had the right to lawfully practice dentistry in this state or elsewhere, pay an annual tax of two dollars as hereinafter provided.

SEC. 2. A board of dental examiners to consist of seven practicing dentists is hereby created, to be known as the board of dental examiners of California, whose duty it shall be to carry out the purposes and enforce the provisions of this act. The members of this board shall be appointed by the governor of California, all of whom shall have been actively and legally engaged in the practice of dentistry in the State of California for at least five years next preceding the date of their appointment, and none of whom shall be members of the faculty of any dental college or dental department of any medical college in the State of California, or shall have any financial interest in any such college. The term for which the members of said board shall hold office shall be four years and until their successors are duly appointed and qualified. Their terms of office shall be so classified that the terms of not more than two members shall expire in any one year. The present members of the board of dental examiners of California appointed under the provisions of the laws of this state in force at the time that this law takes effect shall continue to serve and act as members of the said board, but under the provisions of this act, during their respective terms or until their successors are appointed and qualified. Vacancies occurring in the board of dental examiners shall be filled by appointment by the governor, within thirty days after such vacancy occurs. The governor shall have the power to remove from office at any time any member of the board for continued neglect of duty required by this act, or for incompetency, unprofessional or dishonorable conduct.

SEC. 3. It shall be the power and duty of said board to elect from its membership a president, vice-president and a secretary. The secretary shall receive such compensation as may be fixed by the board, which shall be in addition to his per diem as a member of the board, and all necessary traveling expenses incurred in connection with the performance of the duties of his office. The board shall meet regularly at least twice a year, at such time and place as the board may designate, for the purpose of transacting its business, and special meetings may be held at such other times as the board may elect, or on the call of the president of the board, or of not less than four members thereof. A written notice of the time, place and object of such special meeting shall be mailed by said secretary to all the members not parties to the call, at least fifteen days before the day of meeting. Meetings may be held at any time and place and without notice by unanimous consent evidenced either by writing or by the presence of any member whose consent is necessary. The said board shall examine all applicants for license to practice dentistry according to the provisions of this act and issue licenses to practice dentistry in this state to such applicants as successfully pass the examination of the board and otherwise comply with the provisions of this act; collect and apply all fees as directed by this act; keep a book showing the names of all persons to whom licenses have been granted by said board to practice dentistry, and such other books as may be necessary to plainly show all the acts and proceedings of said board; to have and use a seal bearing the name "Board of Dental Examiners of California." The board shall make an annual report of its proceedings to the governor of California by the fifteenth day of December of each year, together with an account of all moneys received and disbursed by it, pursuant to this act. The board shall have power to adopt rules concerning its meetings and the holding of examinations and the manner of issuance and reissuance of licenses not inconsistent with the provisions of this act. Four members of said board shall constitute a quorum for the transaction of business at any meeting of the board. Each member of the board shall, upon his qualification, file with the secretary his post office address, and thereafter any notice of any change thereof. Any notice mailed to the address so on file, shall be deemed to comply with the requirements of this act as to notice to such member of the board.

SEC. 4. All books of said board shall be of public record and at all times during business hours open to public inspection, and a copy of any part or all thereof duly certified by the secretary of said board shall be primary evidence in any court of this state. The original books, records and papers of the board shall be kept at the office of the secretary of said board which office shall be at such place as may be designated by the board. Said secretary shall furnish to any person making application therefor a copy of any part thereof, certified by him as such secretary, upon payment of a fee of twenty-five cents per hundred words so copied, the said fee to be deposited in the state treasury to the credit of the board. The examination papers of any applicant shall be kept for the period of one year and may then be destroyed, but such examination papers shall be open to inspection only by members of the board and by such applicant or by some one appointed by the latter to inspect the same, or by a court of competent jurisdiction in a proceeding where the question of the contents of such paper is properly involved.

SEC. 5. Each member of the board shall receive a per diem of ten dollars as compensation for each day spent in actual attendance at meetings of the board and at committee meetings of the members of the board, when such meetings shall be specially authorized by the board, and for each day actually spent performing necessary work in connection with the enforcement of this act, together with his necessary traveling expenses.

Sec. 6. Any person over twenty-one years of age shall be eligible to take an examination before the board of dental examiners of California, upon making application therefor and upon (1) paying a fee of twenty-five dollars; (2) furnishing satisfactory testimonials of good moral character; and (3) furnishing satisfactory evidence of having graduated from a reputable dental college, which must have been approved by the board of dental examiners of California; *provided,* that after August 1, 1918, he shall also file his diploma or certificate of graduation with recommendations from a high school accredited to the University of California or any other university of equal standing; or a certificate signed by a state superintendent of public instruction, or similar officer, to the effect that such applicant has had scholastic preparation equivalent in all respects to that demanded for graduation with recommendations from a high school giving a four year course of instruction in the state from which such certificate is issued; (4) in lieu of such diploma or certificate from an accredited high school, such applicant, after said date, may and with like effect furnish to said board of dental examiners a certificate from the board of dental examiners, or similar official body, of some other state in the United States, showing that such applicant has been a duly licensed practitioner of dentistry in such other state for a period of at least five years; *provided, however,* that every person actually engaged as an apprentice to a regularly licensed dentist who has practiced in the State of California for ten years or more shall be eligible for examination, if, within thirty (30) days after the passage of this act, he shall file with the secretary of the board an affidavit stating his name, age, the length of time for which he has been actually apprenticed and with whom; and who, at the time of his application for examination, shall show to the satisfaction of the board that he has served an apprenticeship of at least five (5) years and is a graduate from a high school or similar institution of learning in this or some other state of the United States requiring a three (3) years' course of study; *and provided,* that no examination shall be given to an applicant claiming the right to take the same as an apprentice later than December 30, 1915.

Sec. 7. The examination by the board of applicants for license to practice dentistry in this state shall be sufficiently thorough to test the fitness of the applicant to practice dentistry. It shall include, written in the English language, questions on the following subjects: Anatomy, histology, physiology, anæsthesia, materia medica, pathology, bacteriology, therapeutics, oral surgery, chemistry, metallurgy, operative dentistry, prosthetic dentistry and orthodontia; the answers to which shall be written in the English language. Said written examination may be supplemented by an oral examination. Demonstrations of the applicant's skill in operative and prosthetic dentistry must also be given. All persons successfully passing such examination shall be registered as licensed dentists on the board register, as provided in section three, and shall be granted by the board a license to practice dentistry in the State of California. When a candidate for a license shall have received a grading of eighty-five per cent or above in any given subject, he shall be exempt from re-examination on that subject in subsequent examinations before the said board held at the first or second meeting thereafter. Any member of the board may inquire of any applicant for examination concerning his character, qualifications or experience and may take testimony of any one in regard thereto, under oath, which he is hereby empowered to administer.

Sec. 8. Every person licensed to practice dentistry in this state within six months prior to the passage of this act whose license is not at the time of such passage registered under the provisions of the law under which the same was issued shall register the same as herein provided within six (6) months after this act becomes effective. Every person who shall hereafter be licensed to practice dentistry in this state, shall within six months thereafter register in the office of the county clerk of the county where his place of business is located (if he has no place of business in this state, then in the office of the county clerk of that county in this state wherein at the time shall be situated the office of the secretary of the board of dental examiners of California), in a book kept by the clerk for such purpose, and called a register of dentists, his name, age, office address, the date and number of his license to practice dentistry, and the date of such registration, which registration he shall be entitled to make only upon showing the county clerk his license or a copy thereof certified by the secretary of the board over its seal, and upon making and filing an affidavit stating his name, age, birthplace, the number of his license and the date of its issue, that he is the identical person named in the license; that before receiving the same he complied with all the preliminary requirements of this statute (and the rules of the board of dental examiners as to the terms and the amount of study and examination) ; that no money other than the fees prescribed by this statute (and said rules), was paid directly or indirectly for such license, and that no fraud, misrepresentation or mistake in a material regard was practiced, employed or occurred by any person in order that such license should be conferred. Said person need not personally register before the county clerk but may make the said affidavit before any officer authorized by law to administer oaths, and which affidavit together with the other information and license, or the certified copy therefor as afore provided, shall be forwarded to the said county clerk, who shall act in the same manner as if the party was personally present. The county clerk shall preserve such affidavits in a bound volume and shall issue to every licentiate duly registering and making such affidavit, a certificate of registration in his county, which shall include a transcript of the registration. Such transcript and license may be offered as primary evidence in all courts of the facts therein stated. A copy of such certificate of registration shall be sent by the county clerk to the secretary of the board within five days after it is made. The county clerk's fees for taking such registration and affidavit and issuing such certificate of registration shall be one dollar. A practicing dentist having registered a lawful authority to practice dentistry in one county of the state and removing such practice or part thereof to another county shall show or send by registered mail to the clerk of such other county his certificate of registration, if such certificate clearly shows that the original registration was on an authority issued by the board of dental examiners, or if the certificate of registration itself is endorsed by the secretary of the board of dental examiners as entitled to registration, the clerk shall thereupon register the applicant in the register of dentists of the latter county on receipt of a fee of fifty cents, and shall stamp or indorse on such certificate of registration the date and his name preceded by the words "registered also in ________________ county," and return the certificate of registration to the applicant. Any lawfully registered person who shall thereafter change his or her name according to law shall register the new name with a marginal note of the former name with the clerk of the county or counties where he or she is practicing. The clerk shall forthwith notify the secretary of the board of such change. Any county clerk who knowingly shall make or suffer to be made upon the register of dentists kept in his office any entry other than that provided for in this act, shall be liable to a penalty of fifty dollars, to be recovered by and paid to the said board of dental examiners in a suit in any court having jurisdiction. Any failure, neglect or refusal on the part of any person holding such license to register the same with the clerk of said county as above directed for a period of six months after the issuance thereof shall *ipso facto* work a forfeiture of his or her license, and it shall not be restored except upon the written application and payment to said board of twenty-five dollars. Any suspension, revocation or reinstatement of a license shall with the date thereof be forthwith noted by the county clerk on the margin of the registration thereof upon receipt of notice from the secretary of the board.

Sec. 9. Before any person can practice dentistry in this state, he shall obtain a license to do so from the board of dental examiners. Each application for license shall be accompanied by a fee of twenty-five dollars, which shall in no case be refunded, except that in the case of applicants requiring examination the said fee shall be refunded if the applicant shall be found ineligible to take such examination. Such license shall remain in force until the following first day of May and thereafter so long as the holder thereof shall comply with the provisions of this section relating to an annual tax but not otherwise, and notwithstanding the payment of such tax such license may at any time be forfeited or revoked for a violation of the further requirements of this act. To provide a fund for the enforcement of the provisions of this act every person holding a license to practice dentistry in this state without exception shall pay an annual license tax for the year commencing with the first day of May next following the issuance of such license and annually thereafter. Such payment to be effective shall be made prior to the commencement of the year for which the same accrues and the receipt of the secretary of the board shall be indispensable evidence that the same has been made. The failure, neglect or refusal of any person who was a regularly licensed dentist to pay in advance said annual tax of two dollars during the time his or her license remained in force shall *ipso facto* work a forfeiture of his or her license, and it shall not be restored except upon a written application therefor and the payment to said board of twenty-five dollars, except that such person shall not be required to submit to any examination.

Sec. 10. All fines, penalties and forfeitures including the examination fee, imposed or collected by the board under any of the foregoing provisions of this act shall be paid to the secretary of the board. All fines and penalties imposed or collected in any court for violations of any of the provisions of this act shall be paid by such court to such secretary. The secretary shall on or before the tenth day of each month pay to the state treasury and report to the state controller all fines, penalties and forfeitures received for violations of this act, together with all examination fees, renewal and license fees received by him prior to the date of such report and payment. All funds received by the state treasurer from the secretary of said board shall be placed in a fund to be known as the state dentistry fund, which is hereby created. All disbursements by the board made in the transaction of its business and in the enforcement of this act shall be paid out of said fund upon claims to be presented and audited in the manner usual with other claims against the state; *provided,* that as to the amount of seven hundred dollars of said fund the same shall constitute a revolving fund and may be drawn upon the warrant of the president and secretary of the said board without being audited in the usual manner, in cases of emergency or where cash advances are necessary, but after the sum of seven hundred dollars has been so expended no further warrant shall be drawn on said revolving fund until expenditures previously made from said revolving fund shall be substantiated by vouchers and itemized statements and audited; *and provided, further,* that all expenditures from said revolving fund shall at the end of each fiscal year, or at any other time when demand therefor is made by the board of control or by the state controller, be so substantiated and audited unless previously done.

SEC. 11. Any person shall be understood to be practicing dentistry within the meaning of this act who shall (1) by card, circular, pamphlet, newspaper, or in any other way advertise himself as a dentist, or (2) who shall, for a fee, salary or reward, paid directly or indirectly either to himself or to some other person, perform an operation of any kind upon, or treat diseases or lesions of the human teeth or jaws, or correct malimposed positions thereof, or (3) in any way indicate that he will perform by himself or his agents or servants any operations upon the human teeth or jaws, or (4) make an examination of, with intent to perform or cause to be performed any operation on the human teeth or jaws, or (5) who manages or conducts as manager, proprietor, conductor, or otherwise a place where dental operations are performed; but nothing in this act contained shall prohibit bona fide students of dentistry from operating in the clinical departments or the laboratory of a reputable dental college, or an unlicensed person from performing merely mechanical work upon inert matter in a dental laboratory or a licensed physician from practicing oral surgery.

SEC. 12. Any person, company or association shall be guilty of a misdemeanor, and upon conviction thereof shall be punished by imprisonment in the county jail not less than ten (10) days nor more than one (1) year, or by a fine of not less than one hundred dollars nor more than one thousand five hundred dollars, or by both such fine and imprisonment, who (1) shall sell or barter or offer to sell or barter any dental degree or any certificate or transcript, made or purporting to be made, pursuant to the laws regulating the license and registration of dentists; or (2) shall purchase or procure by barter, any such diploma, certificate or transcript with intent that the same shall be used as evidence of the holder's qualification to practice dentistry, or in fraud of the laws regulating such practice; or (3) shall with fraudulent intent, alter in a material regard any such diploma, certificate or transcript; or (4) shall use, attempt or cause to be used any such diploma, certificate or transcript, which has been purchased, fraudulently issued, counterfeited or materially altered, either as a license to practice dentistry, or in order to procure registration as a dentist; or (5) shall within ten days after demand made by the secretary of the board, fail to furnish to said board the name and address of all persons practicing or assisting in the practice of dentistry in the office of said person, company or association, at any time within sixty days prior to said notice, together with a sworn statement showing under and by what license or authority said person, company or association, and said employees are or have been practicing dentistry, but such affidavit shall not be used in any prosecution under this section, and any person shall be guilty of a misdemeanor and punishable as in this section above provided who (1) shall assume the degree of "doctor of dental surgery" or "doctor of dental medicine," or shall append the letters "D.D.S." or "D.M.D." to his or her name not having duly conferred upon him or her, by diploma from a recognized dental college or school legally empowered to confer the same, the right to assume said title; or shall assume any title, or append any letters to his or her name, with the intent to represent falsely that he or she has received a dental degree or license; or (2) shall in an affidavit, required of an applicant for examination, license or registration, under this act, wilfully make a false statement in a material regard; or (3) shall engage in the practice of dentistry without causing to be displayed in a conspicuous manner and in a conspicuous place in his or her office the name of each and every person employed in the practice of dentistry therein, together with the word mechanic after the name of each unlicensed person employed; or (4) is practicing dentistry in the state without a license, or whose license has been revoked or suspended, or (5) shall under any false, assumed or fictitious name, either as an individual, firm, corporation or otherwise or any name other than the name under which he is licensed, practice, advertise or in any other manner indicate that he is practicing or will practice dentistry. Nothing in this section contained shall be held to prohibit the conferring of degrees and the bestowing of diplomas, by reputable dental colleges of this state, which have been indorsed by the board of dental examiners of California.

Sec. 13. Any dentist may have his license revoked or suspended by the board of dental examiners for any of the following causes:

(1) His conviction of a felony or misdemeanor involving moral turpitude, in which case the record of conviction or a certified copy thereof, certified by the clerk of the court, or by the judge in whose court the conviction is had, shall be conclusive evidence.

(2) The rendition of a final judgment against any such dentist in a court of competent jurisdiction upon a cause of action alleging grossly unskillful or negligent dental practice.

(3) For unprofessional conduct or for gross ignorance or inefficiency in his profession. Unprofessional conduct is hereby defined to be: The employment of persons known as cappers or steerers, to obtain business;

the obtaining of any fee by fraud or misrepresentation; wilfully betraying professional secrets, employing directly or indirectly any student or any suspended or unlicensed dentist to perform operations of any kind, or to treat lesions of the human teeth or jaws, or correct malimposed formations thereof; aiding or abetting any unlicensed person to practice dentistry unlawfully; habitual intemperance; gross immorality; the use of any false, assumed or fictitious name, either as an individual, firm, corporation or otherwise or any name other than the name under which he is licensed, practice, advertise or in any other manner indicate that he is practicing or will practice dentistry.

Sec. 14. The proceedings to revoke or suspend any license under the first subdivision hereof, must be taken by the board on the receipt of a certified copy of the record of conviction. The proceedings under the second subdivision hereof may be taken upon the information of another. All accusations must be in writing, verified by some party familiar with the facts therein charged, and three copies thereof must be filed with the secretary of the board. Upon receiving the accusation the board shall, if it deem the complaint sufficient, make an order setting the same for hearing, at a specified time and place, and the secretary shall cause a copy of the order and of the accusation to be served upon the accused at least ten days before the day appointed in the order for said hearing. The accused must appear at the time appointed in the order and answer the charges and make his defense to the same, unless for sufficient cause the board assign another day for that purpose. If he does not appear the board may proceed and determine the accusation in his absence. If the accused plead guilty or refuse to answer the charges, or upon the hearing thereof the board shall find them or any of them true, it may proceed to a judgment revoking his license or suspending it. The board and the accused may have the benefit of counsel, and the board shall have power to administer oaths, take the deposition of witnesses in the manner provided by law in civil cases, and to compel them to attend before it in person the same as in civil cases, by subpœna issued over the signature of the secretary and the seal of the board and in the name of the people of the State of California. The board shall have power in proper cases to authorize the payment of fees and traveling expenses of necessary witnesses required to appear before the board and actually examined in any proceeding properly before it. Upon the revocation of any license, the fact shall be noted upon the records of the board of dental examiners and the license shall be marked as canceled, upon the date of its revocation. Written notice of such suspension or revocation shall be mailed by the secretary of the board to the county clerk of each county in which such license is then registered.

Sec. 15. The board of dental examiners, or any member or officer thereof, may prefer a complaint for violation of this act, or any part thereof, before any court of competent jurisdiction, and may by its officers, counsel and agents, assist in presenting the law or facts at the trial. It shall be the duty of the district attorney of each county in this state to prosecute all violations of the aforesaid provisions of this act in their respective counties in which such violation occur.

Sec. 16. All acts and parts of acts in conflict with this act are hereby repealed.

DECEASED LICENTIATES.

Abbott, C. A.
Adams, Q. L.
Arbeely, H. J.
Archer, I. B.
Arnold, Otto
Atterbury, C. W.
Austin, H.
Badgley, A.
Badgley, E. E.
Bailey, A. S.
Baldwin, F. M.
Barringer, Leo
Bates, B. F.
Baynes, H. F.
Bedwell, J. L.
Beecher, G. R.
Beers, Barrett
Belden, R. K.
Bendix, C. W.
Bernard, Geo.
Bernard, H. A.
Bertrand, E. H.
Birge, J. J.
Blackburn, D. E.
Blake, C. E.
Blake, R. J.
Blondin, Arthur
Blood, J. N.
Bolton, Thomas
Bometter, Frank
Botsford, George
Bowles, J. B.
Boyd, C. W.
Boyd, G. H.
Bradbury, E. P.
Brainard, A. D.
Brewer, John L.
Briggs, C. M.
Brigham, E. T.
Brigham, K. A.
Brower, R. C.
Bryan, A. C.
Burch, M. A.
Burgess, R. F.
Burleson, F. D.
Burnette, E. F.
Cafferato, A.
Caldwell, F. M., Sr.
Cane, A.
Card, I. D.
Card, W. H.
Carl, W. H.
Carr, G. B.
Case, G. A.
Case, I. M.
Cavanaugh, C. S.
Chalfant, S. P.
Chapman, I. H.
Chapman, Nellie E.
Chapman, S. A.
Chapman, W. W.
Chappell, McCoy
Clark, F. N.
Clark, M. E.
Cogswell, J. L.
Cogswell, T.
Cole, H.
Cole, R. E.
Combs, H. M.
Conner, E. F.
Connor, G. F.
Cook, Israel
Cool, W. P.
Coomes, A. M.
Cooper, G. W.
Cooper, M. L.
Copsey, A. N.
Cowan, E. L.
Craig, W. H.
Cranz, F. H.
Crawford, J. S.
Croone, Wm.
Cummings, E.
Cunningham, F. R.
Cushing, G. H.
Cutlar, R.
Davenport, A. C.
Davis, C. E.
Davis, E. L.
Davis, H. E.
Davis, H. M.
Day, C. A.
Dean, J. S.
DeCrow, Warren
Dempster, Jas.
Dennis, S. W.
Dentler, E. F.
Deuel, E. C.
Devlin, C. A.
Dick, W. A.
Dinnick, J.
Dodge, H. D.
Dodson, E. M.
Dohrman, W. F.
Domeniconi, Jas.
Dorrance, F. C.
Doulton, G. H.
Doyle, J. H.
Drucker, A. C.
Drucker, W. E.
Dunbar, L. L.
Dunn, J. H.
Dutch, Wm.
Dyer, J. J.
Edwards, B. F.
Ellis, P. L.
Emerson, E. W.
Epperson, J. W.
Esterle, A. M.
Evans, W. H.
Farmer, E. W.
Farnsworth, J. F.
Fickett, S. H.
Finigan, L.
Fisher, F. H.
Fitzpatrick, Wm.
Follansbee, H. E.
Forbes, W. W.
Fox, H. B.
French, A. W.
French, L. W.
Fullen, Theo.
Gabbs, E. S.
Garcia, M. J.
Gardinier, Thos.
Gardner, E.
Gardner, R. C.
Gates, O. J.
Gazarian, H.
Gibbon, J. A.
Gildea, B. M.
Gilman, S. M.
Gilstrap, J. M.
Ginns, J. W.
Girardey, W. O.
Glatt, E. C.
Gleaves, A. D.
Goddard, C. L.
Goe, S. E.
Gonzales, I. T.
Goodell, L. E.
Gordon, O. L.
Gould, H. W.
Graham, L. E.
Graves, U. L.
Gray, John
Gray, R. F.
Gray, W. O.
Greenbaum, L.
Griesser, A. M. H.
Griswold, W. F.
Grove, L. H.
Hackett, F. M.
Hale, L. T.
Halsey, I. S.
Halsted, J. L.
Hamilton, Cyrus
Hann, W. D.
Harbison, H. R.
Harlan, C. N.
Harlin, H.
Harris, G. M.
Harris, S. M.
Hart, A. C.
Hartmann, W. P.
Harvey, W. H.
Hatcher, S. H.
Hawley, A. H.
Hawver, J. C.
Hearn, F. G.
Henderson, R. W.
Hendricks, J. D.
Hennessy, J. C.
Herrington, W. M.
Herron, H. H.
Hill, A. B.
Hill, A. L.
Hiller, E. D.
Hitchcock, J. W.
Hodgen, I. N.
Hoffman, M.
Hogshead, W. H.
Hollingsworth, J. W.
Holmes, Stephen
Hooker, A. O.
Horner, J. Van C.
Hurtt, J. M.
Hyde, A. T.
Hyde, C. G.
Iglehart, T. N.
Inglish, W. P.
Jacobs, B. R.
Jenkins, O. C.
Jennin, E. L.
Jessup, J. G.
Jewell, W. S.
Kerwin, L. J.

DECEASED LICENTIATES—Continued.

Kincaid, S. W.
King, W. Z.
Kingsbury, W. B.
Kitchen, C. A.
Knapp, A. R.
Knepper, G.
Knights, W. B.
Knowles, L. E.
Knowlton, J. S.
Knox, H. E.
Kruschke, L. H.
Kutch, A. I.
La Due, W. K.
Lancaster, C. E.
Lane, C. S.
Lansdowne, F.
Larison, C. A.
Larkin, G. W.
Lassen, J. P.
Lawrence, G. O.
Lee, C. E.
Lee, D. B.
Lee, E. W.
Lee, L. A.
Libbey, J. L.
Light, W. W.
Lightbody, H., Jr.
Lillard, W. F.
Lindsay, J. A.
Little, F. F.
Little, J. R.
Livermore, G. W.
Locke, C. W.
Lorentz, M. A.
Lovejoy, G. E.
Lowers, T. H.
Lucas, D. L.
Lundborg, J. A. W.
Macdonald, A. E.
MacMullen, D. A.
Malone, A. F.
Marsh, W. J.
Marshall, Mabel E.
Martin, Wm.
Massie, H. C.
McAlpin, A. C.
McCargar, P.
McDonald, F. S.
McFarlin, R. F.
McGettigan, C. A.
McLain, A. F.
McQuitty, W. A.
Merriman, A. F., Sr.
Mills, C. W.
Minaker, A. W.
Mitchell, H. H.
Moad, B. R.
Moody, J. D.
Moore, C.
Moore, J. S.
Moore, W. A.
Morton, H. R., Sr.
Moterne, C. F.
Moulton, C. R.
Mueller, F. E.
Musselman, S.
Neumann, L.
Nevius, G. F.
Newsom, G. W.
Noble, C. G.
Norman, G. H.
Nye, W. E.
Oviatt, S. M.
Painter, J. B.
Pancoast, F.
Parker, W. S.
Parr, W. H.
Parsons, J. G.
Parsons, M. W.
Pendleton, B. F.
Pennington, A. R.
Perkins, C. O.
Petton, L. D.
Pierson, H. H.
Pless, F. G.
Plomteaux, H. J.
Porter, J. M.
Porter, J. S.
Porter, L. C.
Pospisiel, J.
Prather, W. J.
Price, W. E.
Quick, E. P.
Rabe, John
Rainey, T. H.
Rau, Henry
Ray, C. B.
Read, W. S.
Reid, T. B.
Reith, W. C.
Relley, J. W.
Remington, J. W.
Richards, W. H.
Richards, W. P.
Ricks, C. C.
Roberts, H. F.
Roberts, J. M.
Roberts, S. H.
Rogers, E. P.
Rogers, F. S.
Root, W. A.
Ross, C. G.
Rowe, C. M.
Rubell, W. H.
Russell, E. W.
Sabin, C. R.
Sand, J. E.
Sanford, L. N.
Saul, G. M.
Schwartzchild, F.
Sheets, H. C.
Shields, F. M.
Shrewsbury, N.
Sichel, G. W.
Sichel, Max
Sieberst, W. H.
Simms, C.
Skillen, R. G.
Smith, F. Z.
Smith, J. B. M.
Smith, R. W.
Smith, W. B.
Smitt, Uriel
Spaw, C. R.
Stanley, W. H.
Stauffer, H. W.
Stealey, E. M.
Stephenson, C. H.
Stewart, J. H.
Stewart, J. H.
Strain, E. L.
Sublett, W. A.
Swain, H. P.
Swift, T. E.
Swigert, H. I.
Sylvester, H.
Taggart, D. R.
Tebbets, F. F.
Thompson, A. L.
Thrall, H. H.
Travers, H. P.
Tulles, Morgain
Twist, J. F.
Tyson, Chas.
Upchurch, N. B.
Upham, F. F.
Urmy, H. N.
Van Aukin, J. R.
Vanderlip, J. T.
Van Winkle, H. M.
Veale, A. F.
Verrinder, R. T.
Vidaver, N. J.
Von Bonhorst, C. G.
Wade, Thos.
Walk, C. L.
Walker, A. J.
Walker, C. H.
Waltz, G. W.
Ward, S. T.
Wasley, D. W.
Wasson, J. B.
Webster, L. D.
Wells, L. W.
Westover, G. C.
Whipple, T. S.
Whittaker, E. E.
White, F. H.
White, J. R.
Whitlock, Alma
Wilbert, J. L.
Williams, V. A.
Wilson, C. H.
Winter, J. W.
Winter, W. G.
Wolf, F. O.
Worthley, A. H.
Yates, L. G.

REGISTER OF LICENSED DENTAL PRACTITIONERS.

A

Name.	Address.	City and State.
Abbay, W. H.	893 Willow st.,	Oakland, Cal.
Abbott, E. A.	6 Porter Bldg.,	San Jose, Cal.
Abrams, Geo.		Riverbank, Cal.
Acheson, N. B.	Isis Theater Bldg.,	San Diego, Cal.
Acker, A. V.	133 Forsyth Bldg.,	Reedley, Cal.
Adair, H. C.	344 Fourteenth st.,	San Francisco, Cal.
Agee, C. L.	Kensington Hotel,	San Francisco, Cal.
Agern, A. C.	Garden City Bank Bldg.,	San Jose, Cal.
Aiken, G. S.		Kahului, T. H.
Aiken, P. B.		Jackson, Cal.
Albergaria, J. S.	1005 K st.,	Sacramento, Cal.
Alberti, D. A.	212 Stockton st.,	San Francisco, Cal.
Albright, F. H.	730 Main st.,	Red Bluff, Cal.
Albright, A. N.	Rowell Bldg.,	Fresno, Cal.
Alderson, C. M.	759 S. Broadway,	Los Angeles, Cal.
Alderson, J. W.	2202 Fillmore st.,	San Francisco, Cal.
Alexander, F. W.	Fox-Heller Bldg.,	San Diego, Cal.
Algeo, W. S.	918 Sixth st.,	Sacramento, Cal.
Allen, A. B.	445 Chamber Commerce Bldg.,	Pasadena, Cal.
Allen, C. A.	Broadway and American aves.,	Long Beach, Cal.
Allen, H. G.	702 Head Bldg.,	San Francisco, Cal.
Allen, H. J.	226 San Marcos Bldg.,	Santa Barbara, Cal.
Allen, R. H.	1305 E. Fourteenth st.,	Oakland, Cal.
Allen, W. E.	903 American National Bank Bldg.,	San Diego, Cal.
Allin, Ernest	156 N. Spring st.,	Los Angeles, Cal.
Aloojian, Geo.	Republican Bldg.,	Fresno, Cal.
Alsberg, E. W.		St. Helena, Cal.
Alter, C. H.	328 Investment Bldg.,	Pomona, Cal.
Amelung, H. H.	247 Soquel ave.,	Santa Cruz, Cal.
Ames, G. F.	1502 Park st.,	Alameda, Cal.
Amo, F. P.	130 E. Colorado st.,	Pasadena, Cal.
Anderson, A. B.	511 Citizens Savings Bank Bldg.,	Pasadena, Cal.
Anderson, D. P.	National Bank Bldg.,	Santa Rosa, Cal.
Anderson, F. W.		Winters, Cal.
Anderson, H.	Griffith-McKenzie Bldg.,	Fresno, Cal.
Anderson, R. C.	964 Market st.,	San Francisco, Cal.
Anderson, W. H. B.	602 Hastings st., West,	Vancouver, B. C.
Anderson, W. R.	Union Trust Bldg.,	Santa Rosa, Cal.
Andrews, E. R.	6778 Hollywood blvd.,	Hollywood Cal.
Andrews, F. W.	6404 Hollywood blvd.,	Hollywood, Cal.
Andrews, R. H.	6772 Hollywood blvd.,	Los Angeles, Cal.
Angonnet, C. A.	2304 Clement st.,	San Francisco, Cal.
Aono, F.	915 Butler Bldg.,	San Francisco, Cal.
Apablasa, C. J.	719 Hollingsworth Bldg.,	Los Angeles, Cal.
Arbogast, A. A.	323 Geary st.,	San Francisco, Cal.
Archer, G. S.	6100½ Moneta ave.,	Los Angeles, Cal.
Arentz, G. B.		Pittsburg, Cal.
Argall, F. L.	202 S. Ninth st.,	San Jose, Cal.
Armstrong, J. J.	314½ Georgia st.,	Vallejo, Cal.
Armstrong, W. H.	602 California st.,	San Francisco, Cal.
Armstrong, W. S.	712 American National Bank Bldg.,	San Diego, Cal.
Arner, M. E.	343 Georgia st.,	Vallejo, Cal.
Arnold, B. C.	2706 N. Broadway,	Los Angeles, Cal.
Arnold, E. B.	Decatur Hotel,	Ocean Park, Cal.
Arnold, F. N.		Glendale, Cal.
Arnold, J. R.	577 W. Forty-sixth st.,	Los Angeles, Cal.
Asay, C. E.	117 E. Main st.,	Visalia, Cal.
Aschenbrenner, C. F.	P. O. Box 474,	Covina, Cal.
Ashby, S. J.	Hewes Bldg.,	San Francisco, Cal.
Ashley, J. W.	948 Market st.,	San Francisco, Cal.
Ashmore, C. G.	2300½ S. Grand ave.,	Los Angeles, Cal.
Ashworth, F. D.	2805 Mission st.,	San Francisco, Cal.
Ashworth, F. P.	903 Cole st.,	San Francisco, Cal.
Atamian, A. G.	Edgerly Bldg.,	Fresno, Cal.
Aten, W. O.	Whitney Bldg.,	San Francisco, Cal.
Aten, R. R.	Delger Bldg.,	Oakland, Cal.
Atwater, H. C.	412 Story Bldg.,	Los Angeles, Cal.

Name.	Address.	City and State.
Atwood, W. A.	323 Geary st.,	San Francisco, Cal.
Austin, W. E.	905 Tenth st.,	Modesto, Cal.
Austin, W. P.	264 Main st.,	Salinas, Cal.
Auble, E. F.		Alturas, Cal
Avery, H.	Head Bldg.,	San Francisco, Cal.
Avery, W. N.	Garden City Bank Bldg.,	San Jose, Cal.
Axton, F. R.	222 Crocker Bldg.,	San Francisco, Cal.
Ayers, C. S.	577 Fourteenth st.,	Oakland, Cal.
Ayers, M. J. (Mrs. Floyd)		Kerby, Ore.
Ayers, L. W.	Katz Bldg.,	San Bernardino, Cal.

B

Name.	Address.	City and State.
Baba, S. H.	238 E. First st.,	Los Angeles, Cal.
Bachler, H. G.	1751 Market st.,	San Francisco, Cal.
Bacigalupi, Julia	2169 Green st.,	San Francisco, Cal.
Backman, G. S.	323 Geary st.,	San Francisco, Cal.
Bacon, W. R.	909 Head Bldg.,	San Francisco, Cal.
Badgero, L. B.		Smithers, B. C.
Baer, J.	Liebes Bldg.,	San Francisco, Cal.
Bagby, H. C.	126 W. Main st.,	Santa Maria, Cal.
Bailey, G. E.	116 E. Philadelphia st.,	Whittier, Cal.
Bagley, L. A.	405 Walnut st.,	Red Bluff, Cal.
Bailey, L. C.	2162 Center st.,	Berkeley, Cal.
Bailey, M. F.	501 Watts Bldg.,	San Diego, Cal.
Bailey, M. G.	218 Washington ave.,	Pt. Richmond, Cal.
Bailhache, G. E.	870 McAllister st.,	San Francisco, Cal.
Bailie, H. C.	826 N. Mariposa st.,	Los Angeles, Cal.
Bailie, H. P.	935 Security Bldg.,	Los Angeles, Cal.
Baird, E. E.		Sanger, Cal.
Baird, F. G.	Butler Bldg.,	San Francisco, Cal.
Baird, M. L.	Butler Bldg.,	San Francisco, Cal.
Baker, A. W.	133 Geary st.,	San Francisco, Cal.
Baker, D. B.	Nineteenth and I sts.,	Bakersfield, Cal.
Baker, G. F.	P. O. Box 162,	Twin Falls, Idaho
Baker, R. C.	621 Consolidated Realty Bldg.,	Los Angeles, Cal.
Baker, W. A.	25 E. Pennington st.,	Tucson, Ariz.
Bakerman, B.	234 Higgins Block,	Los Angeles, Cal.
Baldwin, C. V.	5203 Hollywood blvd.,	Los Angeles, Cal.
Baldwin, I. F.	566 Main st.,	El Centro, Cal.
Bales, E. S.	503 Berkeley National Bank Bldg.,	Berkeley, Cal.
Ball, A. E.	6 Orange st.,	Redlands, Cal.
Ballard, F. A.	509 Consolidated Realty Bldg.,	Los Angeles, Cal.
Ballagh, H. A.		Fellows, Cal.
Balzarini, C. E.		Monterey, Cal.
Baptist, J. F.	1058 Page st.,	San Francisco, Cal.
Barabe, E. J.	352 S. Bonnie Brae st.,	Los Angeles, Cal.
Barber, F. S.	653 Sutter st.,	San Francisco, Cal.
Barbour, Edw.		Fresno, Cal.
Bardellini, D. A.	College ave. and Broadway,	Oakland, Cal.
Bar Due, W. N.	1208 Market st.,	San Francisco, Cal.
Barker, A. M.	17 S. First st.,	San Jose, Cal.
Barkelew, F. E.	Union Square Bldg.,	San Francisco, Cal.
Barham, W. W.		Yreka, Cal.
Barnes, A. M.	1127 Clay st.,	Oakland, Cal.
Barnes, F. J.	1744 Front st.,	San Diego, Cal.
Barnes, B.	P. O. Box 662,	Douglas, Ariz.
Barnett, E. S.		Salt Lake City, Utah
Barnett, Jos.		Yreka, Cal.
Barney, J. C.	2909 Thirty-fifth st.,	Sacramento, Cal.
Barney, W. A.	1417 Oxford ave.,	Los Angeles, Cal.
Barnhart, H. C.	Fifth and University ave.,	San Diego, Cal.
Barr, A.		San Rafael, Cal
Barrett, C. G.	1115 D st.,	Sacramento, Cal.
Barrett, T. F.	Union Square Bldg.,	San Francisco, Cal.
Barr, T. I. C.	591 Fourth st.,	San Rafael, Cal.
Bartlett, U. G.	323 Geary st.,	San Francisco, Cal.
Bartmann, G. H.	P. O. Box 264,	Newman, Cal.
Bartram, E. E.	751 S. Vermont ave.,	Hermosa Beach, Cal.
Basford, C. R.		Potter Valley, Cal.
Baskerville, R. L.	5975 University ave.,	E. San Diego, Cal.
Bates, C. P.	463 Cole st.,	San Francisco, Cal.
Bates, H. W.	206 Consolidated Realty Bldg.,	Los Angeles, Cal.

Name.	Address.	City and State.
Batkin, A. A.	421 Dalziel Bldg.,	Berkeley, Cal.
Bauchert, M. F.	Apartado 146,	Chihuahua, Mex.
Bauer, C. F.	101 Post st.,	San Francisco, Cal.
Baumgardner, E. W.		Watsonville, Cal.
Bauske, R. E.	452 Haddon rd.,	Oakland, Cal.
Baxter, J. C.		Independence, Cal.
Beach, R. H.	229 San Fernando Bldg.,	Los Angeles, Cal.
Beach, W. S.	995 Market st.,	San Francisco, Cal.
Beacom, C. W.		Fortuna, Cal.
Beals, C. H.		Rail Road Flat, Cal.
Beamer, R. F.	375 Fourteenth ave.,	San Francisco, Cal.
Bean, Ray	219 W. Seventh st.,	Los Angeles, Cal.
Bean, G. L.	350 Post st.,	San Francisco, Cal.
Beaser, H. P.	McKenzie Bldg.,	Fresno, Cal.
Beattie, G. E.	844 Railroad ave.,	San Francisco, Cal.
Beauchamp, C.	1069 E. Fifty-fourth st.,	Los Angeles, Cal.
Beazley, W. S.	405 S. Hill st.,	Los Angeles, Cal.
Bebb, Wm.		Oak City, Ind.
Beckett, J. A. P.	1356 Sixtieth ave.,	Oakland, Cal.
Bedford, E.	107 Cajon st.,	Redlands, Cal.
Bedford, L. N.	383 E st.,	San Bernardino, Cal.
Bedford, W. E.	383 E st.,	San Bernardino, Cal.
Bedient, M. L.	495 Valencia st.,	San Francisco, Cal.
Beegan, J. J.	4051 Twenty-fourth st.,	San Francisco, Cal.
Beem, G. O.	3512½ Central ave.,	Los Angeles, Cal.
Beers, C. J.	208 Mason Bldg.,	Los Angeles, Cal.
Beeson, E. I.		Healdsburg, Cal.
Belfils, E. K.	1927 Mariposa st.,	Fresno, Cal.
Belfils, J. A.	1927 Mariposa st.,	Fresno, Cal.
Bell, C. H.	2202 Fillmore st.,	San Francisco, Cal.
Bell, D. G.	282 University ave.,	Palo Alto, Cal.
Bell, E. W.	460 Mission rd.,	Daly City, Cal.
Bell, M. J.	1011 Head Bldg.,	San Francisco, Cal.
Bell, R. F.	412 W. Sixth st.,	Los Angeles, Cal.
Bell, W. J.	1046 W. Thirty-fifth st.,	Los Angeles, Cal.
Belt, A. H.		Oceanside, Cal.
Belt, J. G.	P. O. Box 886,	Phoenix, Ariz.
Belton, A. J.	P. O. Box 183,	Burlingame, Cal.
Benbrook, C. M.	707 Auditorium Bldg.,	Los Angeles, Cal.
Benjamin, C. W.	Head Bldg.,	San Francisco, Cal.
Benjamin, E. H.	Head Bldg.,	San Francisco, Cal.
Bennett, A. G.	Garden City Bank Bldg.,	San Jose, Cal.
Bennett, Guy	P. O. Box 586,	Chico, Cal.
Benney, C. R.	301 Bryson Bldg.,	Los Angeles, Cal.
Bennion, S. E.		Hutchinson, Minn.
Benton, C. C.	Arcade Bldg.,	Glen Ridge, New Jersey
Berger, L. O.	6 Porter Bldg.,	San Jose, Cal.
Bergmann, T. L.	West Berkeley Bank Bldg.,	West Berkeley, Cal.
Bergstrom, G.	Grant Bldg.,	San Francisco, Cal.
Bernstein, A. E.	6394 Telegraph ave.,	Oakland, Cal.
Best, B. C.	323 Geary st.,	San Francisco, Cal.
Best, J. P.	209 First National Bank Bldg.,	Long Beach, Cal.
Bethel, F. J.	1104 Eighth st.,	Sacramento, Cal.
Bettencourt, F. C.	506 Eighteenth st.,	Oakland, Cal.
Beverton, D. W.	151 Carmel ave.,	Pacific Grove, Cal.
Bibbero, H. S.	1026 Market st.,	San Francisco, Cal.
Bidwell, H. H.		Monrovia, Cal.
Biggs, J. A.	Nineteenth and Valencia sts.,	San Francisco, Cal.
Bigness, F. H.	Bank Bldg.,	Long Beach, Cal.
Billings, W. M.		Cloverdale, Cal.
Bills, A. V.	1513 Grove st.,	San Diego, Cal.
Bisson, F., Jr.	5620 College ave.,	Oakland, Cal.
Black, J. A.	2215½ Ave. D,	Galveston, Texas
Black, J. P.	4301½ S. Park ave.,	Los Angeles, Cal.
Blackman, J. G.		Beaver City, Mont.
Blackwell, B. G.	213 Lathem ave.,	Hemet, Cal.
Blake, A. E.	Phelan Bldg.,	San Francisco, Cal.
Bland, J. H.	Garden City Bank Bldg.,	San Jose, Cal.
Bland, O.	Republican Bldg.,	Fresno, Cal.
Blauer, R. J.	301 Garden City Bank Bldg.,	San Jose, Cal.
Bliss, C. L.	174 Pacific ave.,	Santa Cruz, Cal.
Bliss, F. A.	112 Market st.,	San Francisco, Cal.
Bliss, F. W.	100 Pacific ave.,	Santa Cruz, Cal.

Name.	Address.	City and State.
Bliss, P. P.	Butler Bldg.	San Francisco, Cal.
Bliss, V. W.	100 Pacific ave.	Santa Cruz, Cal.
Block, H.	3224 S. San Pedro st.	Los Angeles, Cal.
Block, S. D.	701 Auditorium Bldg.	Los Angeles, Cal.
Blodgett, J. M.		Lodi, Cal.
Blondin, L. D.	1805 Telegraph ave.	Oakland, Cal.
Bloomer, E. O.	15 Stockton st.	San Francisco, Cal.
Blosser, E. E.	126 W. Main st.	Santa Maria, Cal.
Boalt, H. A.	Yosemite Bldg.	Stockton, Cal.
Bobbitt, J. M.	Eighth and Main sts.	Riverside, Cal.
Boeckman, H. F.	220 Chamber Commerce Bldg.	Pasadena, Cal.
Boege, J. H.	150 S. Los Angeles st.	Anaheim, Cal.
Boeseke, B. C.	1330 State st.	Santa Barbara, Cal.
Bogart, S. C.	W. P. Story Bldg.	Los Angeles, Cal.
Bokay, C. E.	4510½ Moneta ave.	Los Angeles, Cal.
Boland, W. H.	County Hospital	Los Angeles, Cal.
Bold, H. H.		Oxnard, Cal.
Bollerman, C. E.	664 S. Spring st.	Los Angeles, Cal.
Bolstad, F. P. S.		Taft, Cal.
Bonham, C. A.	1136 Mason st.	San Francisco, Cal.
Bonham, J. F.		Newman, Cal.
Bonnell, F. C.		Hollister, Cal.
Bonstell, C. L.		Arcata, Cal.
Boone, N. I.	P. O. Box 146	Red Bluff, Cal.
Boone, T. E.		Pinole, Cal.
Borger, J. N.	391 Sutter st.	San Francisco, Cal.
Bostwick, E. C.	323 Geary st.	San Francisco, Cal.
Boswell, J. H.	First National Bank Bldg.	Long Beach, Cal.
Bosworth, L. L.	846 Fifth st.	San Diego, Cal.
Bowen, J. J.	264 W. Twenty-third st.	New York, N. Y.
Bowers, F. U.	2815 V st.	Sacramento, Cal.
Bowers, R. H.	14 Locust ave.	Long Beach, Cal.
Bowman, Amy G.	302 Laughlin Bldg.	Los Angeles, Cal.
Bowman, C. H.	302 Laughlin Bldg.	Los Angeles, Cal.
Bowman, I. L.	230 Pine ave.	Long Beach, Cal.
Boxton, Chas.	Physicians' and Surgeons' College	San Francisco, Cal.
Boyce, F. D.	512 S. Broadway	Los Angeles, Cal.
Boyd, B.	410 Mason Bldg.	Los Angeles, Cal.
Boyd, Ida Menges	410 Mason Bldg.	Los Angeles, Cal.
Boyd, S. A.	2814 Prince st.	Berkeley, Cal.
Boyens, E. W.		Dorris, Cal.
Boyens, P. J.	Pacific Bldg.	San Francisco, Cal.
Boyes, H. D.	246 Powell st.	San Francisco, Cal.
Boynton, G. D.	Westbank Bldg.	San Francisco, Cal.
Boys, H. S.	Twelfth and Park sts.	Paso Robles, Cal.
Bradshaw, C. A.	402 S. Salina st.	Syracuse, N. Y.
Branch, F. M.		San Bernardino, Cal.
Brannan, G. E.	550 Guerrero st.	San Francisco, Cal.
Brasch, S. L.	Hearst Bldg.	San Francisco, Cal.
Brassel, E. H.	209 Post st.	San Francisco, Cal.
Bretsch, G. H.	208 Granger Bldg.	San Diego, Cal.
Bretz, A. H.	504 University ave.	San Diego, Cal.
Brewer, B. B.	409 Pacific Bldg.	San Francisco, Cal.
Brewer, W. O. D.	1102 Valencia st.	San Francisco, Cal.
Brenner, A. J.	626 Chamber Commerce Bldg.	Pasadena, Cal.
Bridges, J. S.	7 W. Madison st.	Chicago, Ill.
Brighouse, A.	Westminister Apts.	Los Angeles, Cal.
Brimelow, H. C.	Baker-Detwiler Bldg.	Los Angeles, Cal.
Brizius, W. J.	200 Wilcox Bldg.	Los Angeles, Cal.
Broad, C. J.	577 Fourteenth st.	Oakland, Cal.
Broad, E. J.	1197 Valencia st.	San Francisco, Cal.
Broadwater, W. E.	1327 Broadway	Oakland, Cal.
Broadbeck, H. W.	Seventh and Spring sts.	Los Angeles, Cal.
Brodnax, B.	405 Columbus ave.	San Francisco, Cal.
Bronson, O. E.	514 Rowell Bldg.	Fresno, Cal.
Brooks, F. A.	497 Fulton st.	San Francisco, Cal.
Brooks, F. S.		Hornbrook, Cal.
Brooks, J. A.	1890 Oxford st.	Berkeley, Cal.
Brooks, W. E.	First National Bank Bldg.	Oakland, Cal.
Brown, A. S.		San Fernando, Cal.
Brown, A. R.	619 Marsh-Strong Bldg.	Los Angeles, Cal.
Brown, Alex		San Fernando, Cal.
Brown, A. V.	702 Galen Bldg.	San Francisco, Cal.

Name.	Address.	City and State.
Brown, A. M.	Twenty-third ave. and E. Fourteenth st.,	Oakland, Cal.
Brown, A. A.	Griffith-McKenzie Bldg.,	Fresno, Cal.
Brown, C. E.	406 Peoples' Bank Bldg.,	Sacramento, Cal.
Brown, C. H.	1140A Valencia st.,	San Francisco, Cal.
Brown, C. D.	406 Hewes Bldg.,	San Francisco, Cal.
Brown, E. E.	P. O. Box 333,	Fort Bragg, Cal.
Brown, G. L.	Nienteenth and H sts.,	Bakersfield, Cal.
Brown, G. M.	79 W. Western ave.,	Muskegon, Mich.
Brown, H. E.	423 Auditorium Bldg.,	Los Angeles, Cal.
Brown, Harriet T. (Mrs. Gardner)		Lodi, Cal.
Brown, Harry G.	450 Jones st.,	San Francisco, Cal.
Brown, Hugh	1604 W. Pico st.,	Los Angeles, Cal.
Brown, H. M.		Mendocino, Cal.
Brown, H. S.	1009 W. P. Story Bldg.,	Los Angeles, Cal.
Brown, Holmes G.	S. Park and Franklin sts.,	Pomona, Cal.
Brown, J. A.	391 Sutter st.,	San Francisco, Cal.
Brown, J. Guy	429 First National Bank Bldg.,	Oakland, Cal.
Brown, M. A.	222 Kearney st.,	San Francisco, Cal.
Brown, V. H.		Eagle Rock, Cal.
Brown, W. A.	328 Investment Bldg.,	Pomona, Cal.
Brownell, L. G.	1005 K st.,	Sacramento, Cal.
Brownell, R. E.	Griffith-McKenzie Bldg.,	Fresno, Cal.
Browning, W. F.	802 Fell st.,	San Francisco, Cal.
Browning, W. H., Jr.	1201½ Central ave.,	Los Angeles, Cal.
Brownson, E. R.	520 Bradbury Bldg.,	Los Angeles, Cal.
Brownton, L. C.	705 First National Bank Bldg.,	San Jose, Cal.
Bruhns, H. J.	322 Clement st.,	San Francisco, Cal.
Bryan, L. A.	3325 S. Main st.,	Los Angeles, Cal.
Buck, C. E.	P. O. Box 62,	Downey, Cal.
Buck, Kate D.	808 Security Bldg.,	Los Angeles, Cal.
Buell, E. B.		Escondido, Cal.
Buell, H. C.	212 Mason Bldg.,	Los Angeles, Cal.
Bullard, J. A.	1423 E. Washington st.,	Chicago, Ill.
Bullen, J. F.		Exeter, Cal.
Bundy, L.	308 E. Main st.,	Medford, Ore.
Burbank, G. C.	211 Long Beach Bank Bldg.,	Long Beach, Cal.
Burfield, W. M. H.	864 Bay st.,	San Francisco, Cal.
Burke, I. C.	First National Bank Bldg.,	Hanford, Cal.
Burke, S. E.	826 Los Angeles Trust and Savings Bldg.,	Los Angeles, Cal
Burkholder, E. C.	510 Main st.,	Joplin, Mo.
Burbeck, W. R.	426 S. Spring st.,	Los Angeles, Cal.
Burlingame, F. W.	Physicians Bldg.,	San Francisco, Cal.
Burney, W. I.	342 S. Broadway,	Los Angeles, Cal.
Burns, J. B.	1429 Broadway,	Oakland, Cal.
Burns, O. B.	323 Geary st.,	San Francisco, Cal.
Burns, R. E.	614 Wright & Callendar Bldg.,	Los Angeles, Cal.
Burns, P. M.	311 California st.,	San Francisco, Cal.
Burns, Robt., Jr.	Butler Bldg.,	San Francisco, Cal.
Burr, R. H.		Niles, Cal.
Burridge, W. J.	719 Physicians Bldg.,	San Francisco, Cal.
Burson, D. H.	10 Embarcadero st.,	San Francisco, Cal.
Burt, F. E.	504 O. T. Johnson Bldg.,	Los Angeles, Cal.
Burton, F.	314 E. Main st.,	Stockton, Cal.
Burton, F. P.	208 Yosemite Theater Bldg.,	Stockton, Cal.
Bush, C. G.	146 Grant ave.,	San Francisco, Cal.
Bush, W. P.	2131 University ave.,	Berkeley, Cal.
Bush, F. J. H.		Daly City, Cal.
Butler, A. J.	289 S. Madison ave.,	Pasadena, Cal.
Butler, E. I.	426 Granger Bldg.,	San Diego, Cal.
Butler, S. L.	333 E st.,	Eureka, Cal.
Butler, R. R.	Stockton and Ellis sts.,	San Francisco, Cal.
Butler, W. N.	75 Pratt st.,	Hartford, Conn.
Butterfield, C. L.		Mountain Ranch, Cal.
Bullock, W. M.	607 MacDonald ave.,	Richmond, Cal.
Byrne, D. W.	44½ Pacific ave.,	Santa Cruz, Cal.
Byrne, G. D.	1703 Eddy st.,	San Francisco, Cal.

C

Name.	Address.	City and State.
Caesar, F. M.	1217 W. Tenth st.,	Los Angeles, Cal.
Cafferata, A. J.	Butler Bldg.,	San Francisco, Cal.
Cage, A. D.	429 Fifth st.,	San Diego, Cal.

Name.	Address.	City and State.
Calder, H. F.	219 W. Seventh st.,	Los Angeles, Cal.
Calderwood, W. M. S.	656½ S. Main st.,	Los Angeles, Cal.
Caldwell, C. L.	113 Main st.,	Petaluma, Cal.
Caldwell, F. M.	Sutter and Weber sts.,	Stockton, Cal.
Caldwell, H. H.		Petaluma, Cal.
Caldwell, W. L.	531 E. Main st.,	Stockton, Cal.
Caler, P. B.	607 S. Hill st.,	Los Angeles, Cal.
Callinan, A. W.	1114 Willow st.,	Alameda, Cal.
Callaghan, T. B.	Fifth and F sts.,	Eureka, Cal.
Callender, M. N.	P. O. Box 92,	Van Nuys, Cal.
Calmes, H. P.	2122 Bancroft Way,	Berkeley, Cal.
Cameron, A. C.	Masonic Bldg.,	Redlands, Cal.
Cameron, A. D.	Eighth and Main sts.,	Riverside, Cal.
Camp, F. H.		Willitts, Cal.
Campbell, C. G.		Antioch, Cal.
Campbell, E. O.		Inglewood, Cal.
Campbell, E. R.		Woodland, Cal.
Campbell, F. C.	437 S. Broadway,	Los Angeles, Cal.
Campbell, R. E.	2500 Durant ave.,	Berkeley, Cal.
Cannon, E. E.	5636 Pasadena ave.,	Los Angeles, Cal.
Cannon, H. E.	5636 Pasadena ave.,	Los Angeles, Cal.
Carew, J. A.	Butler Bldg.,	San Francisco, Cal.
Carey, H. M.	Citizens Savings Bank Bldg.,	Pasadena, Cal.
Carlton, H. P.	407 Oakland Bank of Savings Bldg.,	Oakland, Cal.
Carlson, A.	222 Mason Bldg.,	Los Angeles, Cal.
Carlyon, P. H.	Main and Fifth sts.,	Olympia, Wash.
Carmichael, E. A.	336 E. Main st.,	Stockton, Cal.
Carmichael, F. E.		Turlock, Cal.
Carmichael, T. M.	First National Bank Bldg.,	San Jose, Cal.
Carney, F. D.	212 Security Bldg.,	Los Angeles, Cal.
Carpenter, B. L.		Porterville, Cal.
Carpenter, O. S.	3266 Adeline st.,	South Berkeley, Cal.
Carr, C. W.	227 Mercantile Place,	Los Angeles, Cal.
Carrillo, Y. R.		Calexico, Cal.
Carrington, P. T.	2428 Bancroft Way,	Berkeley, Cal.
Carroll, C. E.		Riverside, Cal.
Carroll, J. C.	111 Ellis st.,	San Francisco, Cal.
Carter, C. J.	1128 Broadway,	Oakland, Cal.
Carter, C. M.	516 Sutter st.,	San Francisco, Cal.
Carter, L. E.		San Francisco, Cal.
Case, C. E.	119½ S. Spring st.,	Los Angeles, Cal.
Case, E. G.	141 Montecito ave.,	Oakland, Cal.
Casey, T. F.	569 Fillmore st.,	San Francisco, Cal.
Casner, A. J.	701 Center st.,	Pasadena, Cal.
Cason, F. V.		Pomona, Cal.
Castle, R. R.	3009 Sixteenth st.,	San Francisco, Cal.
Castle, C. C.	P. O. Box 239,	Los Gatos, Cal.
Cauch, F. L.	Garden City Bank Bldg.,	San Jose, Cal.
Cave, D.	210 Lankershim Bldg.,	Los Angeles, Cal.
Cerf, R. M.	111 Powell Bldg.,	San Francisco, Cal.
Chalfant, J.	Butler Bldg.,	San Francisco, Cal.
Chalfant, C. W.	1108 E. Fourteenth st.,	Oakland, Cal.
Champion, R. M.	204 Chamber Commerce Bldg.,	San Bernardino, Cal.
Chapman, C. W.	227 Broad st.,	Nevada City, Cal.
Chambers, W. K.	302 Ferguson Bldg.,	Los Angeles, Cal.
Chandler, E. D.	Sixth and Hill sts.,	Los Angeles, Cal.
Chandler, F. W.	702 Market st.,	San Francisco, Cal.
Chandler, H. S.	Garden City Bank Bldg.,	San Jose, Cal.
Chapin, R. H.		Huntington Beach, Cal.
Chapline, W E.	1302 W. Fortieth pl.,	Los Angeles, Cal.
Chappel, H. G.	Oakland Bank of Savings Bldg.,	Oakland, Cal.
Chappell, J. F.	613 Marin st.,	Vallejo, Cal.
Charles, M. S.	2215 W. Fifteenth st.,	Los Angeles, Cal.
Chase, G. M.	410 Phelan Bldg.,	San Francisco, Cal.
Chase, H. E.	Seneca and Second ave.,	Seattle, Wash.
Chase, W. J.	456 Castro st.,	San Francisco, Cal.
Chilton, J.		Fullerton, Cal.
Chisholm, A. A.	Masonic Temple,	Napa, Cal.
Chisholm, F. R.		Huntington Park, Cal.
Chismore, H. J.	1952 Divisadero st.,	San Francisco, Cal.
Christensen, G. A.	3218 Encinal ave.,	Alameda, Cal.
Christiansen, J. F.		Salt Lake City, Utah
Church, H. E.	San Fernando Bldg.,	Los Angeles, Cal.

Name.	Address.	City and State.
Ciley, J. L.		Stony Ford, Cal.
Clark, E. L.	158 E. Santa Barbara ave.	Los Angeles, Cal.
Clark, F. E.	1375 Fort st.	Honolulu, T. H.
Clark, Franklin E.	603 Garland Bldg.	Los Angeles, Cal.
Clark, H. L.	908 Market st.	San Francisco, Cal.
Clark, W. M.	P. O. Box 486	Redlands, Cal.
Clark, W. N.		Long Beach, Cal.
Clarke, A. G.	4023 Broadway	Oakland, Cal.
Clarke, J. P.	2623 Mission st.	San Francisco, Cal.
Clapp, S. W.	Third and Thomas sts.	Pomona, Cal.
Clay, E. A.	829 Butler Bldg.	San Francisco, Cal.
Clay, L. E.	Republican Bldg.	Fresno, Cal.
Clayton, W. E.	Third and Hill sts.	Los Angeles, Cal.
Clazie, F.	947 Seventy-first ave.	Oakland, Cal.
Clement, C. E.	Berkeley National Bank Bldg.	Berkeley, Cal.
Clendenin, E. C.		Yuma, Arizona
Cline, F. J.		Covina, Cal.
Clinite, F. E.		Redfield, S. D.
Close, R. M. (Mrs. Eckert)	1777 Franklin st.	Oakland, Cal.
Cobb, L. A.		Fowler, Cal.
Cobb, W. B.		Lemoore, Cal.
Cochrane, E. O.	323 Geary st.	San Francisco, Cal.
Cochrane, O. L.		Visalia, Cal.
Cockburn, E. A.	431 F st.	Eureka, Cal.
Cockerton, D. H.	701 United States Bank Bldg.	Oakland, Cal.
Cockrill, R. B.	Patterson Bldg.	Fresno, Cal.
Codling, H. G.		Upland, Cal.
Codoni, L. R.		Ferndale, Cal.
Coe, C. S.	283 University ave.	Palo Alto, Cal.
Coffin, D. S.	1649 W. Forty-eighth st.	Los Angeles, Cal.
Cohen, D. L.	104½ S. Pacific ave.	Redondo Beach, Cal.
Cohen, S. M.	248 Grant st.	Portland, Ore.
Colburn, O. M.	2580 Mission st.	San Francisco, Cal.
Colburn, W. A.	529 Castro st.	San Francisco, Cal.
Cole, C. E.	Brockman Bldg.	Los Angeles, Cal.
Colgan, A. J.		Ontario, Cal.
Colegrove, J. A.	452½ S. Broadway	Los Angeles, Cal.
Colestock, L. A.	424 E. Main st.	Stockton, Cal.
Coleman, B. F.	First National Bank Bldg.	Gilroy, Cal.
Collins, C. E.	846 Fifth st.	San Diego, Cal.
Collins, H. E.	Watts Bldg.	San Diego, Cal.
Collins, M. J.	1429 Broadway	Oakland, Cal.
Colligan, F. J.	1615 Polk st.	San Francisco, Cal.
Collar, F. J.	1424 Union st.	Alameda, Cal.
Combs, J. E.	113 E. Main st.	Visalia, Cal.
Compton, G. T.	323 Geary st.	San Francisco, Cal.
Conte, G. A.	520 S. Broadway	Los Angeles, Cal.
Coney, D. M.	133 Geary st.	San Francisco, Cal.
Coney, Z. T.	Head Bldg.	San Francisco, Cal.
Congdon, M. J.	First National Bank Bldg.	Berkeley, Cal.
Conly, T. W.	1221 Masonic ave.	San Francisco, Cal.
Connolly, C. L.	533½ Fourth st.	Santa Rosa, Cal.
Conner, W. H.	2218½ W. Jefferson st.	Los Angeles, Cal.
Conradt, H. J.		Novato, Cal.
Conroy, J. H.	Hewes Bldg.	San Francisco, Cal.
Constine, L. B.	1350 Ellis st.	San Francisco, Cal.
Cook, A. R.	220 Kearns Bldg.	Salt Lake City, Utah
Cook, Isabelle (Mrs. Barkman)	546 S. Grand ave.	Los Angeles, Cal.
Cook, J. A.	First National Bank Bldg.	Long Beach, Cal.
Cook, J. F.	322 Bradbury Bldg.	Los Angeles, Cal.
Cook, W. E.	Carson Bldg.	Eureka, Cal.
Cool, G. W.	P. O. Box 543	Ocean Park, Cal.
Cool, R. H.	Head Bldg.	San Francisco, Cal.
Coomes, F. E.		Eureka, Cal.
Cooper, A. S.	708 Story Bldg.	Los Angeles, Cal.
Cooper, A. F.	Gross Bldg.	Eureka, Cal.
Cooper, C. W.	207 Porter Bldg.	Woodland, Cal.
Cooper, E. M.	693 Mission st.	San Francisco, Cal.
Cooper, J. C.	2030Mariposa st.	Fresno, Cal.
Cooper, J. H.	102 W. Seventh st.	Hanford, Cal.
Copp, J. P.	Fifth and Olive sts.	Los Angeles, Cal.
Copsey, H. B.	Carson Bldg.	Eureka, Cal.

Name.	Address.	City and State.
Cosad, A. B.	1225 Washington st.	Oakland, Cal.
Corbett, W. F.		Downieville, Cal.
Corbiere, C. C.		Redding, Cal.
Corliss, W. B.	1225 Washington st.	Oakland, Cal.
Corwin, Cecil		Hayward, Cal.
Corwin, L. T.	609 Union Savings Bank Bldg.	Oakland, Cal.
Cory, B. B.	1346 Eighth st.	Alameda, Cal.
Cothran, M. H. (Mrs. Donald)		Cloverdale, Cal.
Coulson, N. T.	714 Market st.	San Francisco, Cal.
Covert, A. T.	308 First National Bank Bldg.	Long Beach, Cal.
Covington, W. T.	Hollingsworth Bldg.	Los Angeles, Cal.
Coyne, W. E. S.	1132 McAllister st.	San Francisco, Cal.
Craigie, H.	467 Castro st.	San Francisco, Cal.
Craig, H. T.	509 Butler Bldg.	San Francisco, Cal.
Craig, T.	209 Post st.	San Francisco, Cal.
Crandall, G. J.	424 S. Broadway	Los Angeles, Cal.
Cram, F. H.		El Centro, Cal.
Crane, C. W.		Long Beach, Cal.
Cranz, L. T.	406 Sutter st.	San Francisco, Cal.
Craven, E. A.	401 Higgins Bldg.	Los Angeles, Cal.
Crawford, E. H.	Fourth and B sts.	Santa Rosa, Cal.
Crawford, H. B.	851½ S. Central ave.	Los Angeles, Cal.
Crawford, J. F.	Forty-eighth and Normandie sts.	Los Angeles, Cal.
Craycroft, W. W.	McKenzie Bldg.	Fresno, Cal.
Creagh, J. W.	1217 Lincoln ave.	Alameda, Cal.
Cree, W. A.	495 Frederick st.	San Francisco, Cal.
Crew, L. C. (Mrs. Graf)		Azuza, Cal.
Cresmer, C. J.	908 Hollingsworth Bldg.	Los Angeles, Cal.
Criger, H. F.	1219 Pennsylvania ave.	San Diego, Cal.
Criswell, R. B.		Los Gatos, Cal.
Croall, M. V. (Mrs. Mervy)	728 Fourteenth st.	San Francisco, Cal.
Croft, S.		Clovis, Cal.
Cronkhite, J. A.	510 Mason Bldg.	Los Angeles, Cal.
Crossett, E. T.	254 Grove st.	Jersey City, N. J.
Crow, G. M.	902 Wright & Callendar Bldg.	Los Angeles, Cal.
Crow, S. H.		Lassen, Cal.
Culver, R. N.	1615 W. Vernon ave.	Los Angeles, Cal.
Cummings, C. H.	503 Octavia st.	San Francisco, Cal.
Cummings, N. C.		Redwood City, Cal.
Cummings, Jude E.		Redwood City, Cal.
Cummings, P. S.		Oxnard, Cal.
Cunha, J. A.	323 Geary st.	San Francisco, Cal.
Cunningham, S. J.	2237 Polk st.	San Francisco, Cal.
Cureton, Edw.	305 Savings and Loan Bldg.	Stockton, Cal.
Cureton, H.	First and Santa Clara sts.	San Jose, Cal.
Cureton, W.		Santa Cruz, Cal.
Curless, J. H.	50 Porter Bldg.	San Jose, Cal.
Curran, J. F.	1112 Title Insurance Bldg.	Los Angeles, Cal.
Curragh, J. M.	66 E. Santa Clara st.	San Jose, Cal.
Currie, C. W.		Chico, Cal.
Curtiss, F. A.	Garden City Bank Bldg.	San Jose, Cal.
Cushing, S. R.	333 Phelan Bldg.	San Francisco, Cal.
Custer, C. A.	3122½ S. Vermont ave.	Los Angeles, Cal.
Cutler, J. W.	17A E. Third st.	Watsonville, Cal.

D

Name.	Address.	City and State.
Dahlen, P. J.	P. O. Box 553	Hartford, Conn.
Daiber, C. P.	104 S. Daly st.	Los Angeles, Cal.
Daingerfield, C. L.	State Hospital	Stockton, Cal.
Daley, H. T.		Burlingame, Cal.
Dalton, T. F.		Holyoke, Mass.
Damron, F. B.	608 First National Bank Bldg.	Long Beach, Cal.
Daniels, E. A.	116½ E. Philadelphia st.	Whittier, Cal.
Daniels, G. E.	146 Grant ave.	San Francisco, Cal.
Danziger, G. A.	Higgins Bldg.	Los Angeles, Cal.
Darby, J. H.	502 S. Main st.	Los Angeles, Cal.
Darneal, W. E.	9401 E. Fourteenth st.	Elmhurst, Cal.
Dart, E. K.		Santa Maria, Cal.
Davies, O. W.	308 Story Bldg.	Los Angeles, Cal.
Davis, Alice M. (Mrs. Fisher)		Hayward, Cal.
Davis, E. N. W.	1617 California st.	San Francisco, Cal.

Name.	Address.	City and State.
Davis, F. B.	Bacon Bldg.,	Oakland, Cal.
Davis, F. V.	1714 Castro st.,	San Francisco, Cal.
Davis, H. C.	Union Square Bldg.,	San Francisco, Cal.
Davis, H. P.	302 Pacific Bldg.,	San Francisco, Cal.
Davis, H. S.	1731 Polk st.,	San Francsico, Cal.
Davis, J. E.	4328 Central ave.,	Los Angeles, Cal.
Davis, Minnie L.	121 Marsh-Strong Bldg.,	Los Angeles, Cal.
Davis, W. E.	133 Geary st.,	San Francisco, Cal.
Davis, W. L.	240 Stockton st.,	San Francisco, Cal.
Davis, S. C.	Union Square Bldg.,	San Francisco, Cal.
Davenport, D. D.	105 E. Main st.,	Stockton, Cal.
Davy, J. W.	First National Bank Bldg.,	San Jose. Cal.
Day, C. A.	302 N. Euclid ave.,	Ontario, Cal.
Day, F. W.	3325 S. Main st.,	Los Angeles, Cal.
Day, L. L.	Myrtle ave.,	Monrovia, Cal.
Day, R. A.	240 Stockton st.,	San Francisco, Cal.
Deacon, A. P.		Willows, Cal.
Dean, J. H.		Franklin, Ind.
Dean, O. S.	610 First National Bank Bldg.,	Oakland, Cal.
Dean, J. C.	310 Dalziel Bldg.,	Oakland, Cal.
Dean, J. S.	215½ Orange st.,	Redlands, Cal.
Deane, B. L.	915 Fourth st.,	Sacramento, Cal.
De Carvalho, A. A.	Alexander Bldg.,	Hong Kong, China
Decker, C. M.	902 I st.,	Sacramento, Cal.
Decker, C. W.	308 Phelan Bldg.,	San Francisco, Cal.
Decker, K. I.	2424 Bancroft Way,	Berkeley, Cal.
DeCou, C. L.	320 W. Eighth st.,	Los Angeles, Cal.
Decker, J. H.	125 W. Richmond ave.,	Point Richmond, Cal.
Deffenbacher, D. S.	323 S. Spring st.,	Los Angeles, Cal.
Deichmiller, C.	215 W. Seventh st.,	Los Angeles, Cal.
Delucchi, J. A.	P. O. Box 143,	Sutter Creek, Cal.
Deming, R. H.	Jacob Bldg.,	Visalia, Cal.
DeMartin, A. D.		Crescent City, Cal.
Dempsey, H. E.	332 Georgia st.,	Vallejo, Cal.
Dennis, C. C.	769 Market st.,	San Francisco, Cal.
Dennis, F. P.	31 W. Main st.,	Alhambra, Cal.
Denzler, G. J.		Kearney, Neb.
DePuy, Leo	339 Fifth ave.,	Pittsburg, Pa.
Derby, A. J.	P. O. Box 175,	Honolulu, T. H.
Derby, A. T.	839 Butler Bldg.,	San Francisco, Cal.
Derby, W. S.	1813 Orange st.,	Los Angeles, Cal.
Derham, F. E.	Head Bldg.,	San Francisco, Cal.
DeVore, W. G.		Tempe, Ariz.
Dewlaney, C. W.		Santa Margarita, Cal.
Dias, E. X.	504½ K st.,	Sacramento, Cal.
Dick, A. Y.		Woodland, Cal.
Dickover, J. J.	First National Bank Bldg.,	Santa Barbara, Cal.
Dieffenbacher, B. L.	506 Ferguson Bldg.,	Los Angeles, Cal.
Dietrick, A. C.	716 Washington st.,	Hoboken, N. J.
Dillman, I. F.	5023 Monte Vista ave.,	Los Angeles, Cal.
Dinsmore, A. M.		Ferndale, Cal.
Ditty, A.	Second and Garey aves.,	Pomona, Cal.
Dixon, M. M.	909 Story Bldg.,	Los Angeles, Cal.
Dobbins, J. W.	120½ Mill st.,	Grass Valley, Cal.
Dobson, W. E.	408 S. Spring st.,	Los Angeles, Cal.
Dod, S. L.	Butler Bldg.,	San Francisco, Cal.
Dodge, F. E.	424 S. Broadway,	Los Angeles, Cal.
Dodge, W. H.		Point Arena, Cal.
Doll, C. V.	308½ D st.,	Marysville, Cal.
Dollin, A. F.	3301 Mission st.,	San Francisco, Cal.
Dollin, J. W.	4111 Eighteenth st.,	San Francisco, Cal.
Donnelley, G. S.	Grove and Clayton sts.,	San Francisco, Cal.
Doolittle, C. V.		Yucaipa, Cal.
Doolittle, F.	467½ Third st.,	San Bernardino, Cal.
Doran, R. E.	Irving and Ninth aves.,	San Francisco, Cal.
Dorland, J. W.	392 E. Colorado st.,	Pasadena, Cal.
Doty, C. V.		Santa Ana, Cal.
Dornberger, E. E.	503 Union Bldg.,	San Diego, Cal.
Dovey, W. R.	1219 Fillmore st.,	San Francisco, Cal.
Dowd, J. W.	Frost Block,	Riverside, Cal.
Dowd, H. I.	Sixth and Hill sts.,	Los Angeles, Cal.
Dowell, W. J.	1486 Eighth st.,	Oakland, Cal.
Downing, H. S.	Black Bldg.,	Los Angeles, Cal.

Name.	Address.	City and State.
Downs, L. W.	1755 W. Adams st.,	Los Angeles, Cal.
Downes, E.	533½ Fourth st.,	Santa Rosa, Cal.
Doyle, E. M.	504½ K st.,	Sacramento, Cal.
Doyle, B. W.	McKenzie Bldg.,	Fresno, Cal.
Doyle, F. C.	1810 Chester ave.,	Bakersfield, Cal.
Dooley, J. H.	San Joaquin Bldg.,	Stockton, Cal.
Driscoll, J. J.	133 Geary st.,	San Francisco, Cal.
Drucker, G. I.	512 Head Bldg.,	San Francisco, Cal.
Drullard, T. W.	I. O. O. F. Bldg.,	Santa Cruz, Cal.
DuBois, C. H.	1011 Third st.,	San Rafael, Cal.
Duckett, C. S.	2161 Shattuck ave.,	Berkeley, Cal.
Duckett, H. C.	1104 Eighth st.,	Sacramento, Cal.
Duff, H. S.	Rowell Bldg.,	Fresno, Cal.
Duffee, R. T.	3993 Twenty-fourth st.,	San Francisco, Cal.
Duggan, N. S.	Dalziel Bldg.,	Oakland, Cal.
Dunbar, P. H.		Stirling City, Cal.
Dundass, E. G.	322 S. Spring st.,	Los Angeles, Cal.
Dungan, F. L.		Hollister, Cal.
Dunn, J. M.	Shreve Bldg.,	San Francisco, Cal.
Dunn, M. J.	2845 Telegraph ave.,	Oakland, Cal.
Dunn, A. G.	4095 Eighteenth st.,	San Francisco, Cal.
Dunn, Robt.	209 Post st.,	San Francisco, Cal.
Dunn, R. K.		Sawtelle, Cal.
Durham, J. H.		Irvington, Cal.
Dyberg, H.		Corcoran, Cal.
Dye, F. M. M.	3403 S. Vermont ave.,	Los Angeles, Cal.
Dyer, E. C.	916 Haight st.,	San Francisco, Cal.

E

Name.	Address.	City and State.
Eames, E. L.	703 N. Brand blvd.,	Tropico, Cal.
Eason, J. A.	323 Geary st.,	San Francisco, Cal.
Earl, G. W.		Gilroy, Cal.
Eaton, F. N.		Redding, Cal.
Eaton, DuBois		Centerville, Cal.
Eaton, J. O.	323 Geary st.,	San Francisco, Cal.
Eastman, W. W.		Sonora, Cal.
Eberle, A.	902 J st.,	Sacramento, Cal.
Eberts, C. L.	207 Consolidated Realty Bldg.,	Los Angele,s Cal.
Echternach, E. G.	412 W. Sixth st.,	Los Angeles, Cal.
Eckes, J. D.	323 Geary st.,	San Francisco, Cal.
Eddy, E. D.	222 Main st.,	Salinas, Cal.
Ede, L. G.		Loyalton, Cal.
Edwards, A. L.	1112 Market st.,	San Francisco, Cal.
Edwards, C. O.	Fortieth and Howe sts.,	Oakland, Cal.
Edwards, D. P.		Crescent City, Cal.
Edwards, D. I.		Westwood, Cal.
Edwards, J. W.	323 Geary st.,	San Francisco, Cal.
Egbert, M.		Dillon, Mont.
Eggert, H. A.	Federal Realty Bldg.,	Oakland, Cal.
Eggert, H. O.	1535 Jackson st.,	San Francisco, Cal.
Ehred, C. T.	1121 Marsh-Strong Bldg.,	Los Angeles, Cal.
Ehrlich, G. T.	3429 Telegraph ave.,	Oakland, Cal.
Eidenmuller, F. H.		Concord, Cal.
Elsen, E. G.	825 Phelan Bldg.,	San Francisco, Cal.
Elsenbrand, G. F.	209 S. State st.,	Chicago, Ill.
Emeis, H. P.	447 Spreckels Bldg.,	San Diego, Cal.
Elberg, H. M.		Woodland, Cal.
Eller, H. C.		Etna Mills, Cal.
Elliott, D. C.		Mayfield, Cal.
Ellis, A. J.	910 Grattan st.,	Los Angeles, Cal.
Ellis, W. A.	830 Market st.,	San Francisco, Cal.
Ellwanger, G. J.	Central Bldg.,	St. Charles, Mo.
Elvidge, G. F.	Thirteenth st. and Broadway,	Oakland, Cal.
Elworthy, F. W.	948 Market st.,	San Francisco, Cal.
Embree, H. S.	1031 J st.,	Fresno, Cal.
Endelman, J.	Dental Dept. Univ., of So. Cal.,	Los Angeles, Cal.
England, D. L.		Santa Barbara, Cal.
English, M. H.	601 Auditorium Bldg.,	Los Angeles, Cal.
Engs, J. S.	Oakland Bank of Savings Bldg.,	Oakland, Cal.
Engstrom, C. J. R.	901 Brockman Bldg.,	Los Angeles, Cal.
Engstrom, C. O.	Ninth and K sts.,	Sacramento, Cal.
Epperson, H. V.	131 Pine ave.,	Long Beach, Cal.
Epsteen, H.	712 Hayes st.,	San Francisco, Cal.

Name.	Address.	City and State.
Erno, H. C.	20 Franklin st.	San Francisco, Cal.
Erwood, H. J.	713 Story Bldg.	Los Angeles, Cal.
Esnard, R. A.	622 S. Broadway	Los Angeles, Cal.
Eshelman, B. F.	811 Story Bldg.	Los Angeles, Cal.
Esgate, J. I.	Eighth and Main sts.	Riverside, Cal.
Esgate, T. D.	First National Bank Bldg.	Riverside, Cal.
Evans, E. E.	210 Union Savings Bank Bldg.	Oakland, Cal.
Evans, A. O.	3423½ S. Vermont ave.	Los Angeles, Cal.
Evans, J. H.		Highland, Cal.
Everts, C. P.	3938 Woodruff ave.	East Oakland, Cal.

F

Name.	Address.	City and State.
Fagg, D. M.	Consolidated Realty Bldg.	Los Angeles, Cal.
Fairfield, G. M.	536 S. Broadway	Los Angeles, Cal.
Fare, J.	Fifth and Central aves.	Los Angeles, Cal.
Farley, R. E.	1593 McAllister st.	San Francisco, Cal
Farman, C. E.		Morgan Hill, Cal.
Farman, C. H.	401 First st.	Napa, Cal.
Farmer, G. C.		Folsom, Cal.
Farmer, W. R.	412 S. Broadway	Los Angeles, Cal.
Farnham, H. H.	707 Watts Bldg.	San Diego, Cal.
Farrow, C. G.	508 Story Bldg.	Los Angeles, Cal.
Farwell, G. Q.		Orange, Cal.
Faught, G. W.		Sebastopol, Cal.
Faulkner, C. A.	927 Broadway	Oakland, Cal.
Fein, C. B.	21 Porter Bldg.	San Jose, Cal.
Felsenthal, L.	807 Van Nuys Bldg.	Los Angeles, Cal.
Ferguson, T. H.	2830 Encinal ave.	Alameda, Cal.
Filmar, Jesse	Citizens' Bank Bldg.	Pasadena, Cal.
Finley, E. S.	12 Garnet Block	San Bernardino, Cal.
Fischer, F.	948 Market st.	San Francisco, Cal.
Fisher, G. N.		Morgan Hill, Cal.
Fisher, Minnie L. (Mrs. Miller)		Yuba City, Cal.
Fisher, W. L.		Redondo Beach, Cal.
Fitch, O. P.		Placerville, Cal.
Fitch, W. W.	282 E. Holt ave.	Pomona, Cal.
Fitzgerald, G. W.	15 Stockton st.	San Francisco, Cal.
FitzGerald, F. J.	410 Auditorium Bldg.	Los Angeles, Cal.
Fitzgerald, V. A.	Sixth and Washington sts.	Portland, Ore.
Fitzgerrell, G. W.		Highland, Cal.
Fitzgibbon, J. G.	291 Geary st.	San Francisco, Cal.
Flanagan, C. A.	3197 Sixteenth st.	San Francisco, Cal.
Flanders, G. H.	117 E. Philadelphia st.	Whittier, Cal.
Fleckenstein, W. J.	606 Hollingsworth Bldg.	Los Angeles, Cal.
Fleissner, H. H.	32 Washington st.	Petaluma, Cal.
Fleming, Jas.	1026 Market st.	San Francisco, Cal.
Fleming, C. K.	First National Bank Bldg.	San Jose, Cal.
Fleming, Thos.	1026 Market st.	San Francisco, Cal.
Fletcher, Thos.	169 Collingwood st.	San Francisco, Cal.
Flood, A. M.	Schroth Bldg.	San Francisco, Cal.
Flood, W. A.		Santa Ana, Cal.
Flory, W. D.	1302 S. Figueroa st.	Los Angeles, Cal.
Foerster, A. A. W.	1007 Valencia st.	San Francisco, Cal.
Fogarty, J. D.		Suisun, Cal.
Fogg, W. S.		Lockeford, Cal.
Foley, C. L.	Shafter and College aves.	Berkeley, Cal.
Forbes, D. W.	U. S. A., care Surgeon Gen.	Washington, D. C.
Fontaine, Mae L.	503 Consolidated Realty Bldg.	Los Angeles, Cal.
Fontaine, S. B.	210 First National Bank Bldg.	Oakland, Cal.
Force, R. W.	406 Citizens' Savings Bank Bldg.	Pasadena, Cal.
Ford, L. E.	704 Los Angeles Investment Bldg.	Los Angeles, Cal.
Ford, A. J.	404 Hewes Bldg.	San Francisco, Cal.
Forrest, J. M., Jr.	3287 Mission st.	San Francisco, Cal.
Forrester, C. O.	1200 Masonic ave.	San Francisco, Cal.
Fortgang, J.	1702 O'Farrell st.	San Francisco, Cal.
Foster, D. E.	308 Story Bldg.	Los Angeles, Cal.
Foster, J. A.	444 S. Broadway	Los Angeles, Cal.
Foster, S. B.	Seventh st. and Broadway	Los Angeles, Cal.
Foster, W. M.	R. D. No. 3, Box 36	Visalia, Cal.
Fountain, M. F.		Blue Lake, Cal.
Fowler, J. R.	P. O. Box 272	San Luis Obispo, Cal.
Fowler, A. A.	14 Theater Bldg.	San Jose, Cal.
Fowler, R. C.	Goodrich Bldg.	Phœnix, Ariz.

Name.	Address.	City and State.
Fox, C. E.	L. and S. Theater Bldg.,	El Centro, Cal.
Fox, C. H.	Nineteenth and I sts.,	Bakersfield, Cal.
Fox, J. B.	925 Tenth st.,	Modesto, Cal.
Fox, J. M.	1204 McAllister st.,	San Francisco, Cal.
Frank, G. W.	113½ W. Fifth ave.,	Arkansas City, Kan.
Frantz, C. B.		Los Molinos, Cal.
Fraser, W. E.	1804 Market st.,	San Francisco, Cal.
Frates, J. E.	602 Fifth ave.,	San Francisco, Cal.
Fratus, M. E. (Mrs. Barry)	Naval Pharmacy Bldg.,	Vallejo, Cal.
Frazer, I. A.	512 Bank of San Jose Bldg.,	San Jose, Cal.
Frazer, T. J.	350 Post st.,	San Francisco, Cal.
Frazier, S. H.	First National Bank Bldg.,	Berkeley, Cal.
Frederick, C. J.	Union Savings Bank Bldg.,	Oakland, Cal.
Fredrick, H. A.	2152 Sutter st.,	San Francisco, Cal.
Free, A. M.		Visalia, Cal.
Free, G. W.	J and Mariposa sts.,	Fresno, Cal.
Freeman, C. E.	614 Watts Bldg.,	San Diego, Cal.
Freeman, I. A.	105 W. Main st.,	Los Angeles, Cal.
Freitas, E. L.	Sixth and Spring sts.,	Los Angeles, Cal.
French, H. W.	812 Washington st.,	Oakland, Cal.
French, R. C.	Eighth st. and Broadway,	Los Angeles, Cal.
Frenzel, F. H.	Berkeley National Bank Bldg.,	Berkeley, Cal.
Fridd, P. D.	444 S. Broadway,	Los Angeles, Cal.
Friedmann, B. L.		Vallejo, Cal.
Fry, J. T.	615 Baker-Detwiler Bldg.,	Los Angeles, Cal.
Fugler, C. A.	133 Geary st.,	San Francisco, Cal.
Fujita, S.	1825 Sutter st.,	San Francisco, Cal.
Fukasawa, J.	338½ E. First st.,	Los Angeles, Cal.
Fuessel, G. B.	740 E. Colorado st.,	Pasadena, Cal.
Fuller, F. N.		Weed, Cal.
Fulsom, H. A.	407 Title Insurance Bldg.,	Los Angeles, Cal.
Funk, R. R. C.		Lemoore, Cal.

G

Name.	Address.	City and State.
Gabbs, M. F.	391 Sutter st.,	San Francisco, Cal.
Galan, J. R.	care Miss R. Galan, 1380 McAllister st.,	San Francisco, Cal.
Galbreath, A. J.	803 Clement st.,	San Francisco, Cal.
Galeoto, S.	355 Columbus ave.,	San Francisco, Cal.
Gallagher, C. V.	Anglo California Bldg.,	San Francisco, Cal.
Galloway, J. F.	Anderson Bldg.,	San Pedro, Cal.
Gallup, T. E.	1099 Main st.,	Santa Clara, Cal.
Gallot, J.	609½ J st.,	Sacramento, Cal.
Gambitz, L. R.	323 Geary st.,	San Francisco, Cal.
Gambitz, M. R.	323 Geary st.,	San Francisco, Cal.
Gammans, W. E.	1336½ Park st.,	Alameda, Cal.
Garden, E. D. R.	248 W. Vernon st.,	Los Angeles, Cal.
Gardner, I. P.	Fifth and Olive sts.,	Los Angeles, Cal.
Gardiner, C. V.	Masonic Temple,	Santa Rosa, Cal.
Garnett, W. M.	408 Wright & Callendar Bldg.,	Los Angeles, Cal.
Garrison, D. M.	634 Fourteenth st.,	Oakland, Cal.
Garrot, A. C.	424 S. Broadway,	Los Angeles, Cal.
Garver, W. M.	326 W. Third st.,	Los Angeles, Cal.
Gaskill, P. D.		Lancaster, Cal.
Gaston, T. E.		San Francisco, Cal.
Gaston, W. A.	205 First National Bank Bldg.,	San Jose, Cal.
Gates, H. E.	146 Grant ave.,	San Francisco, Cal.
Gates, W. G.	Adams Block,	Paso Robles, Cal.
Gautier, L. A.	491 Castro st.,	San Francisco, Cal.
Gaylord, H. A.	1018 E. Main st.,	Alhambra, Cal.
Gedge, H. E.	141 Sixth ave.,	San Francisco, Cal.
Gehan, R. F.	922½ J st.,	Sacramento, Cal.
Geiger, H. H.	622 Elm st.,	Portland, Ore.
George, E.	833 B st.,	Hayward, Cal.
George, J. S.		Represa, Cal.
Getts, B. R.	908 Hollingsworth Bldg.,	Los Angeles, Cal.
Gibbons, J.		Needles, Cal.
Gibson, A. L.		Ukiah, Cal.
Gibson, F. R.		Calexico, Cal.
Gibson, F. W.	First National Bank Bldg.,	Oroville, Cal.
Giddings, C. G.	First st. and Broadway,	Los Angeles, Cal.
Giberson, W. W.		Breckenridge, Colo.
Giffen, R. B.	205 Hagelstein Bldg.,	Sacramento, Cal.

Name.	Address.	City and State.
Giguette, F. A.	173 Fair Oaks ave.,	Pasadena, Cal.
Gilbert, A. J.	15 S. Sutter st.,	Stockton, Cal.
Gilbert, A. H.	965 Fifth st.,	San Diego, Cal.
Gilbert, C. C.	992 Haight st.,	San Francisco, Cal.
Gilbert, G. W.	J and Tulare sts.,	Fresno, Cal.
Gilbertson, J. C.	Dalziel Bldg.,	Oakland, Cal.
Gilbride, R. F.	1615 Polk st.,	San Francisco, Cal.
Giles, C. R.	1963 Oak st.,	San Francisco, Cal.
Gill, W. D.	Sixteenth and Los Angeles sts.,	Los Angeles, Cal.
Gillam, C. E.	Cor. Main and Market sts.,	Lockport, N. Y.
Gillam, J. H.	Tenth and F sts.,	Coronado, Cal.
Gillespie, D. S.	507 Consolidated Realty Bldg.,	Los Angeles, Cal.
Gillman, C. D.	Oakland Bank of Savings Bldg.,	Oakland, Cal.
Gilson, R. E.	1206 Broadway,	Oakland, Cal.
Glasgow, H. J.	Forsyth Bldg.,	Fresno, Cal.
Glasgow, N. B.		Lower Lake, Cal.
Glasier, A. B.	Fourteenth st. and Broadway,	Oakland, Cal.
Gleason, H. C.	Bradbury Bldg.,	Los Angeles, Cal.
Glidden, M. D.	122 E. Main st.,	Stockton, Cal.
Goddard, M.	710 Butler Bldg.,	San Francisco, Cal.
Goff, E. E.	San Marcos Bldg.,	Santa Barbara, Cal.
Gonzales, F. I.	St. Paul Bldg.,	San Francisco, Cal.
Good, C. L.		Lemon Grove, Cal
Goode, W. A.	223 Timken Bldg.,	San Diego, Cal.
Goode, W. W.	I. O. O. F. Bldg.,	Sacramento, Cal.
Goodearle, J. H.	P. O. Box 411,	Oroville, Cal.
Goodrich, G. A.	987 New York ave.,	Pasadena, Cal.
Goodrich, S. J.		Santa Ana, Cal.
Goodrich, V. A.		San Pedro, Cal.
Goodnight, C. H.	1224 Broadway,	Oakland, Cal.
Goodman, C. D.	1225 Washington st.,	Oakland, Cal.
Goodman, N. W.	708 Story Bldg.,	Los Angeles, Cal.
Goodwin, J. H.	506 S. Hill st.,	Los Angeles, Cal.
Goodson, L. J.	230 E. Seventeenth st.,	Los Angeles, Cal.
Goodwin, L. L.		Fullerton, Cal.
Gorham, P. W.	506 Exchange Bldg.,	Los Angeles, Cal.
Gorton, C. D.	834 Whitney Bldg.,	San Francisco, Cal.
Gossard, G. C.	Lamanda Park,	Los Angeles, Cal.
Gothard, J. T.		Burbank, Cal.
Gottenberg, H. W.		Sonoma, Cal.
Gottlieb, T.	Hewes Bldg.,	San Francisco, Cal.
Gould, A. D.	406 American National Bank Bldg.,	San Diego, Cal.
Goursolle, N. T.	739 Market st.,	San Francisco, Cal.
Graf, W. E.	701 S. Alvarado st.,	Los Angeles, Cal.
Graham, F. A.		Bakersfield, Cal.
Graham, G. F.	611 Shreve Bldg.,	San Francisco, Cal.
Graham, H. J.		Oroville, Cal.
Graham, L.	516 Sutter st.,	San Francisco, Cal.
Grant, A. H.	308½ D st.,	Marysville, Cal.
Grant, J. T.		Martinez, Cal.
Gray, B. F.	Exchange Bank Bldg.,	Colorado Springs, Colo.
Gray, C. F.		Sidney, Mont.
Gray, H. S.	607 S. Hill st.,	Los Angeles, Cal.
Gray, J. W.	704 Los Angeles Investment Bldg.,	Los Angeles, Cal.
Gray, F. A.		San Jacinto, Cal.
Gray, H. J.		San Rafael, Cal.
Gray, W. S.		Marysville, Cal.
Gregg, R. J., Jr.	356 S. Broadway,	Los Angeles, Cal.
Green, M. L.	Security Bank Bldg.,	Oakland, Cal.
Green, M. T.	204 Garden City Bank Bldg.,	San Jose, Cal.
Green, W. F.		Yreka, Cal.
Greene, O. E.	115 Berry Block,	Whittier, Cal.
Greenlaw, C. E.	995 Market st.,	San Francisco, Cal.
Greenlaw, H. T.	920 Tower ave.,	Superior, Wis.
Greenlaw, M. A.	Butler Bldg.,	San Francisco, Cal.
Gresham, J. L.	P. O. Box 334,	Coalinga, Cal.
Griffin, E. M.	2116½ W. Jefferson st.,	Los Angeles, Cal.
Griffith, A. C.	Head Bldg.,	San Francisco, Cal.
Griffith, C. M.	1302 Castro st.,	San Francisco, Cal.
Grimes, A.		Laytonville, Cal.
Griner, O. T.		Lakeport, Cal.
Gromaire, C. A.	16 Sadowa st.,	San Francisco, Cal.
Grutner, A. T.	1362A Valencia st.,	San Francisco, Cal.

Name.	Address. City and State.
Grossman, M. E.	P. O. Box 744, Honolulu, T. H.
Grotefend, G. A.	Redding, Cal.
Grove, W. C.	1005 I st., Modesto, Cal
Gruss, F. J.	12 Geary st., San Francisco, Cal.
Gum, E. S.	38 Lorelie ave., Venice, Cal.
Gunsberger, B. M.	1933 Ellis st., San Francisco, Cal.
Gurley, J. E.	350 Post st., San Francisco, Cal.
Guthridge, E. W.	540 Consolidated Realty Bldg., Los Angeles, Cal.
Guthrie, A. R.	305 Sixth ave., San Francisco, Cal.
Guthrie, J. E.	122 W. Third st., Los Angeles, Cal.
Guthrie, T. A.	433½ Main st., Woodland, Cal.
Gwin, W. R.	3736 Stephenson ave., Los Angeles, Cal.
Gwinn, W. M.	3275 Sacramento st., San Francisco, Cal.

H

Name.	Address. City and State.
Haas, H. H.	608 Story Bldg., Los Angeles, Cal.
Haberdier, O. A.	2841 Twenty-third st., San Francisco, Cal.
Hackett, A. E.	Head Bldg., San Francisco, Cal.
Hackett, C. C.	44 Main st., Napa, Cal.
Hackett, S. A.	1330 Washington st., Oakland, Cal.
Hagan, J. W.	1505 Webster st., Alameda, Cal.
Haines, B. W.	323 Geary st., San Francisco, Cal.
Hale, N.	5690 San Pablo ave., Oakland, Cal.
Hale, R. L.	Head Bldg., San Francisco, Cal.
Halford, E. J.	Juneau, Alaska
Hall, F. A.	Berkeley National Bank Bldg., Berkeley, Cal.
Hall, M. M.	2643B Mission st., San Francisco, Cal.
Hall, R. T.	Griffith-McKenzie Bldg., Fresno, Cal.
Hall, S. H.	San Joaquin Bldg., Stockton, Cal.
Hall, S. W.	2728 Channing Way, Berkeley, Cal.
Hall, W. C.	Main st., Petaluma, Cal.
Hall, W. H.	904 American National Bank Bldg., San Diego, Cal.
Hall, W. P.	2643B Mission st., San Francisco, Cal.
Haley, G. W.	Porterville, Cal.
Haley, P. S.	1768A Union st., San Francisco, Cal.
Hallock, C. H.	536 S. Broadway, Los Angeles, Cal.
Halsey, N. S.	591 Fourth st., San Rafael, Cal.
Halsey, W. H.	1327 Broadway, Oakland, Cal.
Halsted, E. P.	1122 Sutter st., San Francisco, Cal.
Hambleton, W. D.	P. O. Box, 443, Santa Monica, Cal.
Hambly, C. R.	138½ S. Spring st., Los Angeles, Cal.
Hamilton, J. W.	1127 Clay st., Oakland, Cal.
Hamlin, B. R.	1332 Park st., Alameda, Cal.
Hamman, L. M.	656½ S. Main st., Los Angeles, Cal.
Hammar, C. L.	Griffith-McKenzie Bldg., Fresno, Cal.
Hammen, E. C.	Fisher Block, Redlands, Cal.
Hammond, T. F.	172 University ave., Palo Alto, Cal.
Hammond, W. G.	Willows, Cal.
Hammond, W. F.	452½ S. Broadway, Los Angeles, Cal.
Hammel, Annie R. (Mrs. Watkins)	King City, Cal.
Hamner, K.	Eureka, Cal.
Hancock, A. E.	San Bernardino, Cal.
Hanford, W. H.	Thayer Bldg., Oakland, Cal.
Hankins, E. E.	536 S. Broadway, Los Angeles, Cal.
Hanna, G. R.	Seventh and Grand aves., Los Angeles, Cal.
Hansen, C. T.	133 Geary st., San Francisco, Cal.
Hansen, W. A.	Dos Palos, Cal.
Hanschen, P. H.	2397 Mission st., San Francisco, Cal.
Hanson, H. P.	201 Garden City Bank Bldg., San Jose, Cal.
Harding, F. H.	304 Central Bank Bldg., Oakland, Cal.
Hardy, C. S.	209 Post st., San Francisco, Cal.
Hardy, J. R.	618 Timken Bldg., San Diego, Cal.
Hare, D. A.	833 Market st., San Francisco, Cal.
Hargrave, W.	Covelo, Cal.
Hargrove, G. H.	202 N. Main st., Los Angeles, Cal.
Harms, M. F. E.	Pleasanton, Cal.
Harms, R. G. C.	1429 Broadway, Oakland, Cal.
Harnden, F. W.	1013 Shreve Bldg., San Francisco, Cal.
Harper, C. E.	127½ Kern st., Tulare, Cal.
Harper, B. W.	6763 Hollywood blvd., Hollywood, Cal.
Harrell, T. P.	604 Los Angeles Investment Bldg., Los Angeles, Cal.
Harris, C. B.	Park and Santa Clara sts., Alameda, Cal.

Name.	Address.	City and State.
Harris, G. N.	10 Quackenbush Bldg.	Bellingham, Wash.
Harris, G. R.	787 Market st.	San Francisco, Cal.
Harris, Isabelle D. (Mrs. Holm)	Producers' Bank Bldg.	Bakersfield, Cal.
Harris, H. L.	324A Georgia st.	Vallejo, Cal.
Harris, E. R.		Roseville, Cal.
Harrison, E. L. (Mrs. Schley)	126 Stockton st.	San Francisco, Cal.
Hart, C. E.	391 Sutter st.	San Francisco, Cal.
Hart, F. E.	Union Square Bldg.	San Francisco, Cal.
Hart, O. P.		Needles, Cal.
Hart, W. C.	Butler Bldg.	San Francisco, Cal.
Harth, A. P.		Lindsay, Cal.
Hartman, P. C.	2206 Hopkins st.	Oakland, Cal.
Harwood, E. M.	Sixth and Hill sts.	Los Angeles, Cal.
Harwood, H. B.	P. O. Box 203	Claremont, Cal.
Haseltine, L. F.	4354 Melrose ave.	Los Angeles, Cal.
Haslehurst, A. O.	Brower Bldg.	Bakersfield, Cal.
Hasslinger, O. A.	1557 Ellis st.	San Francisco, Cal.
Hatch, J. H.	Schroth Bldg.	San Francisco, Cal.
Hatcher, L. E.	424 Chamber Commerce Bldg.	Pasadena, Cal.
Hatcher, J. H.	205½ Euclid ave.	Ontario, Cal.
Hatfield, C. T.		Fairbury, Neb.
Hathaway, G. E.	925 S. Alvarado st.	Los Angeles, Cal.
Hathaway, H. W.	228 W. Fourth st.	Los Angeles, Cal.
Haughawout, H. C.	115D Flower st.	Los Angeles, Cal.
Hauselt, C. P.	750 Baker st.	San Francisco, Cal.
Hawkins, C. G.	5332 Santa Monica blvd.	Los Angeles, Cal.
Hawley, D. E.		Antioch, Cal.
Hawkins, E. C.	130 E. Colorado st.	Pasadena, Cal.
Harvey, C. L.	P. O. Box 145	Sonoma, Cal
Hawver, H. D.	1361 Park st.	Alameda, Cal
Hayashi, Y.	308 Commercial Bldg.	Oakland, Cal.
Hays, A. P.	315 S. Broadway	Los Angeles, Cal.
Hays, I. W., Jr.	209½ Main st.	Grass Valley, Cal
Hays, H. M.	417 Katz Bldg.	San Bernardino, Cal.
Hayward, R. W.	W. P. Story Bldg.	Los Angeles, Cal.
Heacock, F. T.	493 Haight st.	San Francisco, Cal.
Heacock, W. R.	Fisher Block	Redlands, Cal.
Head, A. W.	247 S. Flower st.	Los Angeles, Cal.
Head, T. D.	1125 Broadway	Oakland, Cal.
Head, W. W.		Chico, Cal.
Heaney, W. P.	323 Geary st.	San Francisco, Cal.
Hebert, C. P.		Riverside, Cal.
Heider, W. T.	1128 Broadway	Oakland, Cal.
Hein, G. N.	323 Geary st.	San Francisco, Cal.
Heino, J.	1026 Market st.	San Francisco, Cal.
Heitman, F. W.	437 Main st.	Merced, Cal.
Heitman, H.	Schroth Bldg.	San Francisco, Cal.
Helsby, E. E.		Colton, Cal.
Heller, C. C.	741 W. Eleventh st.	Los Angeles, Cal.
Heller, L. C.	405 Security Bldg.	Los Angeles, Cal.
Henderson, C. H.		Martinez, Cal.
Henderson, H. N.	408 Berkeley National Bank Bldg.	Berkeley, Cal.
Henderson, M. M.		Anaheim, Cal.
Henderson, N.	Citizens Bank Bldg.	Alameda, Cal.
Henderson, W. D.	Acheson Bldg.	Berkeley, Cal.
Henderson, W. R.	Union Bldg.	Stockton, Cal.
Hendricks, H. T.		Hanford, Cal.
Hendricks, P.		Banning, Cal.
Hendrickson, W. M.	204 Dodworth Bldg.	Pasadena, Cal.
Henry, G. E.		Riverside, Cal.
Henry, G. W.	792½ Kensington Road	Los Angeles, Cal.
Herbert, E. F.	1003½ State st.	Santa Barbara, Cal.
Herd, F. D.		Williams, Cal.
Herkner, C. E.		Los Banos, Cal.
Herman, L. F. (Mrs. Ginno)	2133 Allston Way	Berkeley, Cal.
Herms, F. W.	718 Market st.	San Francisco, Cal.
Herrick, C. A.	133 Geary st.	San Francisco, Cal.
Hervey, A. R.	Hervey-Finley Bldg.	Santa Ana, Cal.
Hergenhahn, A. E.	508 Temple Auditorium	Los Angeles, Cal.
Heseman, C. E.		Riverside, Cal.
Hesketh, W. R.	Fourth and Spring sts.	Los Angeles, Cal.
Hess, O. G.	252 N. Flower st.	Los Angeles, Cal.
Hewes, R. E.	424 S. Broadway	Los Angeles, Cal.
Hewitt, H. G.		Santa Rosa, Cal.

Name.	Address.	City and State.
Heyn, E. G.		Madera, Cal.
Hicok, E. L.		Colusa, Cal.
Higby, N. C.	152 W. Second st.	Pomona, Cal.
Higgason, J. C.		McLeansboro, Ill.
Higgins, R. M.	1010 Broadway	Oakland, Cal.
Higgins, T. S.	509 Phelan Bldg.	San Francisco, Cal.
High, C. B.	53 Young Bldg.	Honolulu, T. H.
Higaki, M.	1662 Post st.	San Francisco, Cal.
Hill, C. E.	540 Consolidated Realty Bldg.	Los Angeles, Cal.
Hill, G. E.	301 Pantages Bldg.	Los Angeles, Cal.
Hill, T. L.	775 Post st.	San Francisco, Cal.
Hilliker, E. P.	301 N. Broadway	Los Angeles, Cal.
Hinckley, I. L.		Fillmore, Cal.
Hinckley, E. J.	356 Perry st.	Oakland, Cal.
Hines, L. B.		Lodi, Cal.
Hines, J. P.	822 S. Broadway	Los Angeles, Cal.
Hinman, H. T.	P. O. Box 636	Eureka, Cal.
Hiniker, A. J.	719 Eleventh st.	Modesto, Cal.
Hipkins, H.	Shreve Bldg.	San Francisco, Cal.
Hirth, C. E.		Vernal, Utah
Hirtz, N. F.	604 Merritt Bldg.	Los Angeles, Cal.
Hoagland, W. W.	832 Market st.	San Francisco, Cal.
Hocker, J. M.	948 Market st.	San Francisco, Cal.
Hodgen, J. D.	Schroth Bldg.	San Francisco, Cal.
Hodges, G. A.		Turlock, Cal.
Hodges, L. E.	402 Haas Bldg.	Los Angeles, Cal.
Hoffer, V.		Santa Rosa, Cal.
Hoffman, B. J.	1418 Forty-sixth ave.	Oakland, Cal.
Hogan, E. L.	1103 El Centro ave.	Los Angeles, Cal.
Hogan, W. J.	2697 Bryant st.	San Francisco, Cal.
Hogue, R. V.	403 S. Brand blvd.	Glendale, Cal.
Holcomb, C. L.		Selma, Cal.
Holcombe, J. D.		Globe, Ariz.
Holcombe, J. V.	1128 Broadway	Oakland, Cal.
Holden, S. R.	407 Lonsdale Bldg.	Duluth, Minn.
Holland, F. E.	Twelfth and Central ave.	Los Angeles, Cal.
Holladay, A. C.	608 First National Bank Bldg.	Long Beach, Cal.
Holladay, W. R.	408 H. W. Hellman Bldg.	Los Angeles, Cal.
Homer, J.	636 S. Broadway	Los Angeles, Cal.
Hollingsworth, M. W.	R. F. D. No. 1, Box 35A	Nordhoff, Cal.
Hollingsworth, R. M.		Monterey, Cal.
Holloway, E. S.		Colusa, Cal.
Holman, F. D.	707 Auditorium Bldg.	Los Angeles, Cal.
Holt, F. J.	48 Sefton Block	San Diego, Cal.
Homan, W. W.	1221 Marsh-Strong Bldg.	Los Angeles, Cal.
Honodel, W. R.	Fourth and Broadway sts.	Chico, Cal.
Hood, R. J.	Sixth and Hill sts.	Los Angeles, Cal.
Hook, B. B.	401 Powell Bldg.	San Francisco, Cal.
Hooper, H.	964 Market st.	San Francisco, Cal.
Hooper, R. V.		New Zealand
Hopkins, E. L.	2030 Mariposa st.	Fresno, Cal.
Hopkins, J. C.	107 S. Coronado st.	Los Angeles, Cal.
Horner, H. I.	704 MacDonald ave.	Richmond, Cal.
Horner, L. F.	Center and Shattuck ave.	Berkeley, Cal.
Horn, C. M.	1047 Fifth st.	San Diego, Cal.
Hosking, R. G.	495 Valencia st.	San Francisco, Cal.
Hosmer, E.	929 Fifth st.	San Diego, Cal.
Houck, F. H.		Anaheim, Cal.
Howard, E. G.	322 Bradbury Bldg.	Los Angeles, Cal.
Howard, E. J.	323 Geary st.	San Francisco, Cal.
Howard, J. L.		Marysville, Cal.
Howard, Jas. L.	1702 N. Vermont ave.	Los Angeles, Cal.
Howard, J. R.	2161 Sutter st.	San Francisco, Cal.
Howard, O. J.	Patterson Block	Fresno, Cal.
Howatt, G. A.		Scotia, Cal.
Howe, A. B.	Berkeley National Bank Bldg.	Berkeley, Cal.
Howe, H. G.		Hanford, Cal.
Howell, R. B.		Auburn, Cal.
Houston, R. B.	2686 W. Pico st.	Los Angeles, Cal.
Hubbell, A. B.	2577 San Pablo ave.	Oakland, Cal.
Huck, H. C.	558 Columbus ave.	San Francisco, Cal.
Huddle, W. F.	202½ S. Broadway	Los Angeles, Cal.
Huff, W. F.	501 Long Beach Bank Bldg.	Long Beach, Cal.

Name.	Address.	City and State.
Hughes, J. L.		Dinuba, Cal.
Hughes, W. R.	903 Federal Bldg.	Oakland, Cal.
Hullinger, A. J.	Mixter Bldg.	Exeter, Cal.
Hultberg, F. L.	787 Market st.	San Francisco, Cal.
Humes, H. C.	692 Valencia st.	San Francisco, Cal.
Humelbaugh, A. C.	306 Merchants National Bank Bldg.	Los Angeles, Cal.
Hunger, F. J.	Peoples Bank Bldg.	Sacramento, Cal.
Hunt, F. M.	Story Bldg.	Los Angeles, Cal.
Hunter, O. R.	1007 Broadway	Oakland, Cal.
Hurd, E. M.	E. Sixth and Oregon sts.	Portland, Ore.
Hursh, R. L.	1001A Guerrero st.	San Francisco, Cal.
Huston, C. G.	W. P. Story Bldg.	Los Angeles, Cal.
Husted, F. R.	First National Bank Bldg.	San Jose, Cal.
Husted, G. B.	Tenth and I sts.	Modesto, Cal.
Hussey, S. W.	2832 College ave.	Berkeley, Cal.
Hutchason, C. B.		St. Joseph, Mo.
Hutchason, W. E.	326½ S. Broadway	Los Angeles, Cal.
Hutchison, J. E.		Monterey, Cal.
Hyatt, F.	614½ E. Twelfth st.	Los Angeles, Cal.
Hutton, J. A. D.	First National Bank Bldg.	Berkeley, Cal.
Hyde, E. C.	331 O. T. Johnson Bldg.	Los Angeles, Cal.

I

Name.	Address.	City and State.
Idomoto, Y.	1526 Geary st.	San Francisco, Cal.
Inverarity, F.	609 W. P. Story Bldg.	Los Angeles, Cal.
Irgens, L. S.	409 Union Savings Bank Bldg.	Oakland, Cal.
Irons, R. H.		Los Gatos, Cal.
Irving, A. E.		Carmel, Cal.
Ito, F. H.	142 Main st.	Watsonville, Cal.
Ivey, J. R.	301½ Broad st.	Nevada City, Cal.
Iwata, K.	119 N. San Pedro st.	Los Angeles, Cal.

J

Name.	Address.	City and State.
Jacobs, J. E.	Title Insurance Bldg.	Los Angeles, Cal.
Jacobs, J. J.	102½ E. Fourth st.	Santa Ana, Cal.
Jackman, G. F.		Chino, Cal.
Jackson, A. C.	207 Citizens' Savings Bank Bldg.	Pasadena, Cal.
Jackson, F. C.		Yuba City, Cal.
Jackson, J. A.	2017 San Antonio ave.	Alameda, Cal.
Jackson, H. N.	909 Watts Bldg.	San Diego, Cal.
Jackson, O. E.	Commercial Savings Bank Bldg.	Stockton, Cal.
Jackson, W. N.	466 Columbus ave.	San Francisco, Cal.
Jacobsen, L. J.	410 Hewes Bldg.	San Francisco, Cal.
Jaegeling, J. P.	707 Whitney Bldg.	San Francisco, Cal.
James, E. P.	616 Security Bldg.	Oakland, Cal.
Janes, C. A.	2007 Sutter st.	San Francisco, Cal.
Janes, R. K.	Stanton Bldg.	Pasadena, Cal.
Janke, W. E.	233 Post st.	San Francisco, Cal.
Jarvis, C. C.	156 N. Spring st.	Los Angeles, Cal.
Jarvis, H. A.		Calexico, Cal.
Jarvis, C. F. H.	314 First National Bank Bldg.	Oakland, Cal.
Jeffery, J. A.	457 Cadillac ave.	Detroit, Mich.
Jenkins, F. M.	1498 Arrowhead ave.	San Bernardino, Cal.
Jennings, G. P.		Watsonville, Cal.
Jewett, S.		Watsonville, Cal.
Johnson, A. E.	703 Broadway Central Bldg.	Los Angeles, Cal.
Johnson, A. W.	P. O. Box 746	Modesto, Cal.
Johnson, Della M. (Mrs. Hogan)		Sonora, Cal.
Johnson, F. D.	Oakland Bank of Savings Bldg.	Oakland, Cal.
Johnson, G. C.	1472 Shattuck ave.	Berkeley, Cal.
Johnson, J. W.	Physicians Bldg.	San Francisco, Cal.
Johnson, S. H.		Palm Springs, Cal.
Johnston, E. M.	520 Rowell Bldg.	Fresno, Cal.
Johnston, D. A.	810 Title Insurance Bldg.	Los Angeles, Cal.
Johnston, G. K.		Maricopa, Cal.
Johnston, Robt.	Fourth and E sts.	Eureka, Cal.
Jonasen, G. H.	P. O. Box 1183	Goldfield, Nev.
Jones, C. V.	905 I st.	Modesto, Cal.
Jones, E. L.	338 E. Market st.	Stockton, Cal.
Jones, J. B.	1104 Eighth st.	Sacramento, Cal.
Jones, J. W.	107 N. Spring st.	Los Angeles, Cal.

Name.	Address.	City and State.
Jones, L. D.	801 Watts Bldg.,	San Diego, Cal.
Jones, L. S.	Acheson Bldg.,	Berkeley, Cal.
Jones, L. G.	2044 Logan ave.,	San Diego, Cal.
Jones, P. C.		Fort Bragg, Cal.
Jones, T. R.	1011 Phelan Bldg.,	San Francisco, Cal.
Jones, H. McK.	Second and Thomas sts.,	Pomona, Cal.
Joost, Anna D. (Mrs. Roller)	619 Belvedere st.,	San Francisco, Cal.
Jordan, B. A.	410 Germain Bldg.,	Los Angeles, Cal.
Jordan, L. W.	General Delivery,	San Francisco, Cal.
Jordan, Minnie E.	112 W. Ninth st.,	Los Angeles, Cal.
Joslyn, W. E.	Culver rd.,	Rochester, N. Y.
Jurgens, C. H.	1224 Broadway,	Oakland, Cal.
Justice, J. A.	808 W. P. Story Bldg.,	Los Angeles, Cal.

K

Name.	Address.	City and State.
Kaiser, E. E.	Sixth and Broadway sts.,	Los Angeles, Cal.
Kaiser, F. S.	5553 Hollywood blvd.,	Los Angeles, Cal.
Kaiser, O. V.	Owl Drug Bldg.,	San Diego, Cal.
Kaufmann, E. H.	1196 McAllister st.,	San Francisco, Cal.
Kauffung, L. H.	1001 Valencia st.,	San Francisco, Cal.
Kanouse, J. G.	230 E. Seventeenth st.,	Los Angeles, Cal.
Keagy, J. M.	529½ Beacon st.,	San Pedro, Cal.
Kearns, T. H.	203 Church st.,	San Francisco, Cal.
Keating, N. M.	607 Koenig Bldg.,	San Francisco, Cal.
Keating, O. J.		Juneau, Alaska
Kedian, W. H.		Bakersfield, Cal.
Keck, H. E.	1211 Broadway,	Oakland, Cal.
Keefe, E. D.	Butler Bldg.,	San Francisco, Cal.
Keel, C. W.	P. O. Box 185,	Marysville, Cal.
Keene, F. G.	1204 Government st.,	Victoria, B. C.
Keene, H. H.	25 Third st.,	San Francisco, Cal.
Keesing, J. B.	349 Thirty-fourth st.,	San Francisco, Cal.
Keith, Etta G.	Care A. W. Chance, Corbett Bldg.,	Portland, Ore.
Keller, P. W.		Groveland, Cal.
Kelly, E. H.	3002B Stephenson ave.,	Los Angeles, Cal.
Kelly, N. D.	275 Post st.,	San Francisco, Cal.
Kelley, F. E.	728 Macdonald ave.,	Richmond, Cal.
Kelley, G. F.		Truckee, Cal.
Kellogg, A. C.	716 Phelan Bldg.,	San Francisco, Cal.
Kelsey, M.	908 Story Bldg.,	Los Angeles, Cal.
Kemp Van Ee, F.	506 Divisadero st.,	San Francisco, Cal.
Kemp, E. B. P.		Suisun, Cal.
Kempe, M. V.	708 Washington st.,	Oakland, Cal.
Kendrick, J. G.	318 W. Thirty-first st.,	Los Angeles, Cal.
Kennedy, A. I.	702 Market st.,	San Francisco, Cal.
Kennedy, G. D.	309 McKenzie Bldg.,	Fresno, Cal.
Kennedy, W. F.	355 S. Broadway st.,	Los Angeles, Cal.
Kenney, I. B.		Eagle Bend, Minn.
Kent, C. H.	628 Auditorium Bldg.,	Los Angeles, Cal.
Kenward, F. B.	240 Stockton st.,	San Francisco, Cal.
Keogh, J. B.		Point Arena, Cal.
Kerch, K.		National City, Cal.
Kerley, W. A.	426 W. Sixth st.,	Los Angeles, Cal.
Kertchem, D. J.	Elks Bldg.,	Stockton, Cal.
Kesling, E. C.	2650 W. Pico st.,	Los Angeles, Cal.
Kestler, F. S.	205 Hagelstein Bldg.,	Sacramento, Cal.
Kettell, H. C.		Pomona, Cal.
Key, J. W.	1005 Fillmore st.,	San Francisco, Cal.
Key, T. B.	Temple Block,	Los Angeles, Cal.
Keys, T. R. E.	391 Sutter st.,	San Francisco, Cal.
Khantamour, K. M.		Fresno, Cal.
Kier, G. P.	801 Watts Bldg.,	San Diego, Cal.
Kikuchi, Y.		Los Angeles, Cal.
Kimbell, F. I.		Riverside, Cal.
Kilburn, C. M.	Third and Main sts.,	Watsonville, Cal.
Kimball, E. W.		Merced, Cal.
Kimerer, L. L.		Wheatland, Cal.
King, E. D.	310 Security Bldg.,	Los Angeles, Cal.
King, J. J.		Los Banos, Cal.
King, Birdine	Alpine and Costelar sts.,	Los Angeles, Cal.
King, J. F.	Thomson Bldg.,	Oakland, Cal.
King, J. R.	Eleventh and Main sts.,	Riverside, Cal.

Name.	Address.	City and State.
King, H. C.	617 Consolidated Realty Bldg.,	Los Angeles, Cal.
King, R.	420 Chestnut st.,	Evansville, Ind.
King, W. J.		Gridley, Cal.
Kingsbury, B. C.	111 Ellis st.,	San Francisco, Cal.
Kinley, F. J.		Healdsburg, Cal.
Kinsella, W. M.	730 N. Commerce st.,	Los Angeles, Cal.
Kirby, A. H.		Elsinore, Cal.
Kirk, H. M.	308 Chamber Commerce Bldg.,	Pasadena, Cal.
Kirkpatrick, H. D.	Marine Bank Bldg.,	Long Beach, Cal.
Kirkwood, I. S.	Twenty-fourth and Hoover sts.,	Los Angeles, Cal.
Kirtland, H. B.	Commercial Bank Bldg.,	San Luis Obispo, Cal.
Kleeman, F. C.	212 Blake Block,	Oakland, Cal.
Kleaver, G. C.		Yreka, Cal.
Kleinberg, J.	2322½ Vermont ave.,	Los Angeles, Cal.
Kleiser, G. W.		San Francisco, Cal.
Kleiser, J. A.	1421 Nineteenth st.,	Bakersfield, Cal.
Klepinger, W. P.	6½ N. Main st.,	Dayton, Ohio
Kloeppel, F. C.	309 W. Fifty-third st.,	Los Angeles, Cal.
Kline, A. E.	314½ D st.,	Marysville, Cal.
Knight, R.		Patton, Cal.
Kneass, M. S.	356 Walnut st.,	San Francisco, Cal.
Knowles, C. W.	177 Post st.,	San Francisco, Cal.
Knowles, W. A. L.	1967 Pine st.,	San Francisco, Cal.
Knox, A. J.	Grant Bldg.,	San Francisco, Cal.
Knox, H. B.		Hayward, Cal.
Koenecke, H. J.		Salinas, Cal
Koenig, F. A.	1234 Castro st.,	San Francisco, Cal.
Kobayashi, M.	590 N. Fifth st.,	San Jose, Cal.
Korf, J.	2335 S. Sixth st.,	Ocean Park, Cal.
Kriechbaum, G. H.		East Auburn, Cal.
Kroech, E. C.	301 N. Broadway,	Los Angeles, Cal.
Kroeck, P. H.	2804 Folsom st.,	San Francisco, Cal.
Kruse, E. A.	South Berkeley Bank Bldg.,	Berkeley, Cal.
Kruse, C. R.	South Berkeley Bank Bldg.,	Berkeley, Cal.
Kuns, C. A.	719 W. Seventh st.,	Los Angeles, Cal.
Kuster, C. F.	408 S. Spring st.,	Los Angeles, Cal.

L

Name.	Address.	City and State.
LaBaree, W. H.	416 Oakland Bank of Savings Bldg.,	Oakland, Cal.
LaBelle, F. J.	3312 Broadway,	Oakland, Cal.
Lackey, W. L.	P. O. Box 270,	Porterville, Cal.
Lacoste, H. L.	291 Geary st.,	San Francisco, Cal.
Lamb, L.	920 First st.,	Benicia, Cal.
Lane, C. C.	709 Mission st.,	San Francisco, Cal.
Lane, R. C.	909 Story Bldg.,	Los Angeles, Cal.
Lane, F. J.	Schroth Bldg.,	San Francisco, Cal.
Lane, W. R.	P. O. Box 185,	Lakeport, Cal.
Lang, E. A.	Ocean and Pine ave.,	Long Beach, Cal.
Lang, J. E.	915 Van Nuys Bldg.,	Los Angeles, Cal.
Langer, G. R.	714 Balboa st.,	San Francisco, Cal.
Langdon, F. C.	300 Severance Bldg.,	Los Angeles, Cal.
Lape, J. B.	L. A. Investment Bldg.,	Los Angeles, Cal.
Laraia, E. A.	1461 Hyde st.,	San Francisco, Cal.
Latimer, D. H.	First National Bank Bldg.,	Hanford, Cal.
Lau, C. D.	7424½ Sunset blvd.,	Los Angeles, Cal.
Laughlin, O. A.		Valley City, N. D.
Laughlin, L. B.	625 Vallejo st.,	San Francisco, Cal.
Laughlin, J. O.	180 Sutter st.,	San Francisco, Cal.
Lauler, C. E.	Orpheum Bldg.,	Los Angeles, Cal.
La Touche, A. C.	1914 W. Forty-first dr.,	Los Angeles, Cal.
Lathrop, C. M.	322 S. Spring st.,	Los Angeles, Cal.
Lauer, L. A.	213 Story Bldg.,	Los Angeles, Cal.
Lawford, C. D. V.		San Jacinto, Cal.
Lawrence, W. H.	53 S. First st.,	San Jose, Cal.
Lawrenz, W. F.		Carpenteria, Cal.
Lawson, L. H.	444 S. Broadway,	Los Angeles, Cal.
Layne, L. W.	2446 Channing Way,	Berkeley, Cal.
Lay, E.	American National Bank Bldg.,	San Diego, Cal.
Learn, H. W.	425 University ave.,	San Diego, Cal.
Leavelle, A. B.	6404 Hollywood blvd.,	Hollywood, Cal.
Ledyard, B. C.	Garden City Bank Bldg.,	San Jose, Cal.
Ledyard, F. K.	937 Security Bldg.,	Los Angeles, Cal.

Name.	Address.	City and State.
Lee, C. G.	920 Webster st.	Oakland, Cal.
Lee, C. M.	301½ Columbus ave.	San Francisco, Cal.
Lee, E. F.	1833 E. Sixty-fourth st.	Los Angeles, Cal.
Leek, G. W.	26 Stockton st.	San Francisco, Cal.
Leek, G. W., Jr.	St. Dunstan Apts.	San Francisco, Cal.
Leek, I. G.	517 Fillmore st.	San Francisco, Cal.
Leek, J. J.		Kennett, Cal.
Leek, L. L.	1700 Bush st.	San Francisco, Cal.
Leiser, A. H.	196 Sixth ave.	San Francisco, Cal.
Leisure, G. C.	619 Marsh-Strong Bldg.	Los Angeles, Cal.
Leggett, J. W.	607 Butler Bldg.	San Francisco, Cal.
Leggett, R. M.	607 Butler Bldg.	San Francisco, Cal.
Leighton, C. H.	244 Bleecker st.	Brooklyn, N. Y.
Lehritter, J. F.	133 Geary st.	San Francisco, Cal.
Lemon, C. H.	22 John st.	Salinas, Cal.
Lemmon, C. F.	811½ State st.	Santa Barbara, Cal.
Leonard, J. W.	539½ S. Broadway	Los Angeles, Cal.
Leong, F. S. S.	1103 Stockton st.	San Francisco, Cal.
Leppo, D. H.	National Bank Bldg.	Santa Rosa, Cal.
Leslie, F. A.		Hanford, Cal.
Leslie, R. Y.	616 Chamber Commerce Bldg.	Pasadena, Cal.
Leslie, W. W.	333 Main st.	Porterville, Cal.
Letcher, I. W.	430 Fillmore st.	San Francisco, Cal.
LeVeau, J. G.	Union Square Bldg.	San Francisco, Cal.
Levinger, L. V.	Liebes Bldg.	San Francisco, Cal.
Levy, S.	516 Sutter st.	San Francisco, Cal.
Levy, W. H.	516 Sutter st.	San Francisco, Cal.
Levkowicz, M. W.	323 Geary st.	San Francisco, Cal.
Lewis, J. W. F.		Calistoga, Cal.
Lewis, W. F.	Farmers and Merchants National Bank Bldg.	Long Beach, Cal.
Lewis, M. J.	450 Third st.	Richmond, Cal.
Lieberthal, C. P.	Story Bldg.	Los Angeles, Cal.
Liggitt, R. C.	2403 N. Broadway	Los Angeles, Cal.
Likens, G. W.		Crockett, Cal.
Likens, J. W.	133 Geary st.	San Francisco, Cal.
Lindsay, C. M.		Boulder Creek, Cal.
Linscott, L. M.	112 Pacific ave.	Santa Cruz, Cal.
Linscott, W. R.	112 Pacific ave.	Santa Cruz, Cal.
Litchfield, O. J.		Healdsburg, Cal.
Little, G. B.	P. O. Box 83	Palo Alto, Cal.
Littler, S. J.		Ceres, Cal.
Litton, C. A.	2421 Sutter st.	San Francisco, Cal.
Lochman, O. G.	326½ S. Broadway	Los Angeles, Cal.
Lockwood, A. T.	2044 Mariposa st.	Fresno, Cal.
Lockwood, R. C.	Citizen's Savings Bank Bldg.	Pasadena, Cal.
Locke, F. H.	Sixteenth st. and San Pablo ave.	Oakland, Cal.
Logan, J. B.	3224 S. San Pedro st.	Los Angeles, Cal.
London, M. A.	City Paris Bldg.	San Francisco, Cal.
Long, G. E.	R. F. D. No. 1, box 70	San Pedro, Cal.
Long, L. C.	310 Security Bldg.	Los Angeles, Cal.
Lord, A. N.	811 Story Bldg.	Los Angeles, Cal.
Lord, C. C.	P. O. Box 321	San Diego, Cal.
Loring, E. L.	326 Atchison Bldg.	West Berkeley, Cal.
Loughan, J. T.	714 Baker-Detweiler Bldg.	Los Angeles, Cal.
Lough, J. C.	251 Divisadero st.	San Francisco, Cal.
Louisson, W. S.	511 Judge Bldg.	Salt Lake City, Utah
Lovegrove, W. R.	1398 Washington st.	San Fancisco, Cal.
Lovell, R. B.		San Rafael, Cal.
Low, W. A.	53 S. First st.	East San Jose, Cal.
Lowder, W. D.	145 S. Spring st.	Los Angeles, Cal.
Lowder, W. L.	531 Bryson Bldg.	Los Angeles, Cal.
Lucas, P. O.		Tropico, Cal.
Lucchetti, A. F.	916 Kearny st.	San Francisco, Cal.
Luccock, J. P.		Bishop, Cal.
Luce, S. T.	11 Pine ave.	Long Beach, Cal.
Ludlow, W. B.	2131 University ave.	Berkeley, Cal.
Lufkin, A. W.		Salt Lake City, Utah.
Lundy, E. A.	1104 Los Angeles Investment Bldg.	Los Angeles, Cal.
Lukins, C. W.	Sixth and Hill sts.	Los Angeles, Cal.
Lusby, C. R.	1110½ W. B. Way	Glendale, Cal.
Lundberg, K. M.		Upper Lake, Cal.
Lutz, I. D.	First National Bank Bldg.	Berkeley, Cal.
Lutz, C. E.	244 Hotel Sherman Bldg.	Los Angeles, Cal.

Name.	Address.	City and State.
Lutz, J. A. G.	2507 Pico st.	Los Angeles, Cal.
Lupfer, W. C.	Sixth and Hill sts.	Los Angeles, Cal.
Lush, F. A.	4534 Whetsel ave.	Madisonville, Ohio
Lyman, E. H.		Santa Barbara, Cal.
Lynn, T. M.	126 W. Third st.	Los Angeles, Cal.
Lynn, Thos.	103 S. Rowan ave.	Los Angeles, Cal.
Lynch, J. F.		Martinez, Cal.
Lynch, J. H.	2700A Mission st.	San Francisco, Cal.
Lynch, T. A.	803 California Bldg.	Los Angeles, Cal.
Lyon, G. F.		Delano, Cal.
Lyon, H. D.	6097 Claremont and College ave.	Oakland, Cal.
Lyons, W. C.	228 Coronado Bldg.	Denver, Colo.
Lytle, W. M.	577 Fourteenth st.	Oakland, Cal.

M

Name.	Address.	City and State.
Maclin, J. A.	412 W. Sixth st.	Los Angeles, Cal.
Mabee, W. E.	Los Angeles Investment Bldg.	Los Angeles, Cal.
MacDonald, C. A.	Kinney-Kendall Bldg.	Pasadena, Cal.
MacDonald, F. M. (Mrs. MacLean)		Prince Rupert Island, B. C.
MacDonald, N. G. (Mrs. Lane)		Berkeley, Cal.
MacMillan, J. E.	812 Central Bldg.	Pasadena, Cal.
MacNevin, G. M.	718 Market st.	San Francisco, Cal.
Madden, F. M.	3004 Sixteenth st.	San Francisco, Cal.
Magill, J. C.	321 Georgia st.	Vallejo, Cal.
Maiden, W. R.	412 W. Sixth st.	Los Angeles, Cal.
Maher, J. P.	532 Fifteenth st.	Oakland, Cal.
Maile, J. V.	159 Western ave.	Los Angeles, Cal.
Mail, W. R.	Sixth and Hill sts.	Los Angeles, Cal.
Maldonado, E.	Physicians Bldg.	San Francisco, Cal.
Mallett, A.	424 Wolf Bldg.	Stockton, Cal.
Malone, G. E.		Dunsmuir, Cal.
Maltby, B. T.	201 First National Bank Bldg.	Long Beach, Cal.
Mapes, O. K.	Third and Santa Monica sts.	Santa Monica, Cal.
March, H. D.	Elks Bldg.	Chico, Cal.
Markey, C. E.	712 Central Bldg.	Pasadena, Cal.
Marckres, C. C.	Ryland Bldg.	San Jose, Cal.
Mariotte, P. A.	Thompson Bldg.	Oakland, Cal.
Marks, L. H.		Oroville, Cal.
Markwitz, L.	905 Divisadero st.	San Francisco, Cal.
Marlow, G. C.	413 Broadway	San Diego, Cal.
Marr, G. D.		Pasadena, Cal.
Marriott, C. H.	115 Broadway	Santa Maria, Cal.
Marsh, C. E.	222 Granger Block	San Diego, Cal.
Marshall, L. C.		Vacaville, Cal.
Marsten, A. I.	2580 Mission st.	San Francisco, Cal.
Martin, F. P.	Bay Station	Alameda, Cal.
Martin, Geo.	Mattahakirch st., 81	West Berlin, Germany
Martin, J. W.	Citizens Saving Bank Bldg.	Pasadena, Cal.
Martin, Todd		Tulare, Cal.
Martin, L. L.		Concord, Cal.
Martin, F. J.		Oakdale, Cal.
Martin, H. G.	403½ Brand blvd.	Glendale, Cal.
Mason, J. A.	2364 Vallejo st.	San Francisco, Cal.
Mason, W. M.	2446 Channing Way	Berkeley, Cal.
Mathews, E. S.	Josse Block	San Diego, Cal.
Matthews, C. F.	1297 Market st.	San Francisco, Cal.
Mathien, H. J.	504 First National Bank Bldg.	Oakland, Cal.
Mathis, R. C.		Douglas, Alaska
Matson, A. P.	1225 Walnut st.	Alameda, Cal.
Matsuno, M. A.	300½ M st.	Sacramento, Cal.
Matzen, N.		Escondido, Cal.
Mauk, E. H.	Dental Dept., University of California	San Francisco, Cal.
Mayhew, A. B.		Palo Alto, Cal.
Maynard, C. C.	Garden City Bank Bldg.	San Jose, Cal.
Maynard, S. C.	Garden City Bank Bldg.	San Jose, Cal.
Mazza, J. H.	Western ave.	Petaluma, Cal.
McAbee, J. W.		Booneville, Cal.
McAlpin, J. D.	344 Fourteenth st.	San Francisco, Cal.
McArthur, J. F.	808 W. Broadway	Glendale, Cal.
McAvoy, R. C.	W. P. Story Bldg.	Los Angeles, Cal.
McBain, J. A.	615 K st.	Sacramento, Cal.
McBean, C. O.	Sixth and Hill sts.	Los Angeles, Cal.

Name.	Address.	City and State.
McBean, W. H.	2057 Divisadero st.,	San Francisco, Cal.
McCabe, E.	202 Lake ave.,	Watsonville, Cal.
McCabe, W. H.	5494 College ave.,	Oakland, Cal.
McCan, F. A.	Elks Bldg.,	Stockton, Cal.
McCargar, R.		Cottage Grove, Ore.
McCarthy, C. J.	166 Geary st.,	San Francisco, Cal.
McCarty, C. H.	29 E. Madison st.,	Chicago, Ill.
McCarty, W. H.	4 W. Garfield blvd.,	Chicago, Ill.
McCarty, W. W.	Ocean ave. and Pine st.,	Long Beach, Cal.
McClaskey, F. T.	I. O. O. F. Bldg.,	Sacramento, Cal.
McClish, J. M.		Healdsburg, Cal.
McClinton, R.	70 St. John st.,	Launceston, Tasmania
McClure, J. F.		Ukiah, Cal.
McCluskey, R. W.	903 I st.,	Sacramento, Cal.
McCollum, B. B.	412 W. Sixth st.,	Los Angeles, Cal.
McCord, W. B.		Hayward, Cal.
McCormick, J. J.	4796A Mission st.,	San Francisco, Cal.
McCowen, C. S.	Head Bldg.,	San Francisco, Cal.
McCowen, G.		Ukiah, Cal.
McCoy, J. C.	615 Auditorium Bldg.,	Los Angeles, Cal.
McCoy, J. D.	Brockman Bldg.,	Los Angeles, Cal.
McCoy, J. R.	Brockman Bldg.,	Los Angeles, Cal.
McCracken, W. J.	1327 Broadway,	Oakland, Cal.
McCready, C. R.	932 S. Valencia st.,	Los Angeles, Cal.
McCurry, J. M.	1201 L st.,	Sacramento, Cal.
McDaniel, G. T.	133 Geary st.,	San Francisco, Cal.
McDaniel, Geo.	806 Baker st.,	East Bakersfield, Cal.
McDonald, R. F.	429 F st.,	San Diego, Cal.
McElhaney, M. A.		San Fernando, Cal.
McFarland, G. H.		Hemet, Cal.
McGaughey, C. W.	925 Market st.,	San Francisco, Cal.
McGlashan, E. L.	1296A Ninth ave.,	San Francisco, Cal.
McGough, J. A.	133 Geary st.,	San Francisco, Cal.
McGovern, J. C.	Galli Bldg.,	S. San Francisco, Cal.
McGowan, J. E.	141 Holt ave.,	Pomona, Cal.
McGowan, J. L.		King City, Cal.
McGuire, M. F.	502 Clement st.,	San Francisco, Cal.
McHargue, W. H.	P. O. Box 135,	Colton, Cal.
McIntyre, A. A.	P. O. Box 1265,	San Diego, Cal.
McKay, J. H.	532 Fifteenth st.,	Oakland, Cal.
McKay, P. H. F.	6779½ Hollywood blvd.,	Los Angeles, Cal.
McKay, W. W.	Fifth and C sts.,	San Diego, Cal.
McKean, N. D.	1503 Park st.,	Alameda, Cal.
McKee, J. R.	824 J st.,	Sacramento, Cal.
McKellar, S. L.		Pasadena, Cal.
McKenzie, A. W.	401 Butler Bldg.,	San Francisco, Cal.
McKenzie, T. W.		Reedley, Cal.
McKevitt, F. H.	291 Geary st.,	San Francisco, Cal.
McKibbin, W. M.	P. O. Box 684,	Turlock, Cal.
McKinley, H. M.	323 Geary st.,	San Francisco, Cal.
McKinney, C. W.	Edgerly Bldg.,	Fresno, Cal.
McLernon, T. J.	322 Pennsylvania st.,	Camden, N. J.
McLaughlin, W. F.	323 Geary st.,	San Francisco, Cal.
McLoughlin, G. V.	Butler Bldg.,	San Francisco, Cal.
McLeod, A. D.	724 H. W. Hellman Bldg.,	Los Angeles, Cal.
McManus, J. C.	Ninth and K sts.,	Sacramento, Cal
McMath, J. F. O.	1307 Broadway,	Oakland, Cal.
McMurray, M.	Butler Bldg.,	San Francisco, Cal.
McMahon, L. J.	162 Post st.,	San Francisco, Cal.
McNally, E. T.	Eighth st. and Broadway,	Los Angeles, Cal.
McNeil, H. A.	New Nixon Bldg.,	Reno, Nev.
McQuaid, C. C.	604 Butler Bldg.,	San Francisco, Cal.
McQueen, J. S.		Bishop, Cal.
McQuilken, E. R.	572 Lighthouse ave.,	Pacific Grove, Cal.
McWilliams, W. L.		Sharpsville, Pa.
Meagher, C. E.	616½ S. Broadway,	Los Angeles, Cal.
Meagher, F. L.	1204 Sutter st.,	San Francisco, Cal.
Medcraft, H. C.	2511 Shattuck ave.,	Berkeley, Cal.
Meek, C. A.	First National Bank Bldg.,	Berkeley, Cal.
Meek, R. W.	Delger Bldg.,	Oakland, Cal.
Meisenheimer, L. L.		Ocean Park, Cal.
Menges, M. M.		Fullerton, Cal.
Menendez, H.		Sonora, Cal.

Name.	Address.	City and State.
Menken, P. H.	1756 Fillmore st.,	San Francisco, Cal.
Menne, W. A.	5153 Mission St.,	San Francisco, Cal.
Menton, H. O. F.		Santa Clara, Cal.
Merchant, D. N.	4503½ Moneta st.,	Los Angeles, Cal.
Meredith, G. H.	2944 Twenty-fourth st.,	San Francisco, Cal.
Merrick, D. J.	536 S. Broadway,	Los Angeles, Cal.
Merritt, C. H.	308 Union Savings Bank Bldg.,	Oakland, Cal.
Merrill, A. P.	309 E. Colorado st.,	Pasadena, Cal.
Merrill, F. B.	32 N. State st.,	Chicago, Ill.
Merriman, A. F., Jr.	708 Oakland Bank of Savings Bldg.,	Oakland, Cal.
Mervy, E. T.	516 Butler Bldg.,	San Francisco, Cal.
Mertes, J. P.	126 W. Third st.,	Los Angeles, Cal.
Meseroll, J. M.	3806 E. First st.,	Los Angeles, Cal.
Messner, E. M.		Fort Jones, Cal.
Messner, K. W.	952 Market st.,	San Francisco, Cal.
Metcalf, F. H.	922½ J st.,	Sacramento, Cal.
Metzger, E. S.		El Centro, Cal.
Meyer, A.	830 Market st.,	San Francisco, Cal.
Meyer, F. W.	407 Central Bank Bldg.,	Oakland, Cal.
Meyer, W. A.	520 Butler Bldg.,	San Francisco, Cal.
Meyer, W. P.		Long Beach, Cal.
Meyer, P. E.	1007 Tenth st.,	Sacramento, Cal.
Mhoon, W. J.	706 Broadway,	Oakland, Cal.
Middleton, J. E.		Grass Valley, Cal.
Middleton, G. W.	111 Ellis st.,	San Francisco, Cal.
Miles, H. S.	213 S. Broadway,	Los Angeles, Cal.
Millar, J. B. F.		Dinuba, Cal.
Millar, R. F.	1659 Divisadero st.,	San Francisco, Cal.
Millard, G. A.		Nipinnawasee, Cal.
Miller, A. B.		Crescent City, Cal.
Miller, G. A.	Brockman Bldg.,	Los Angeles, Cal.
Miller, G. E.	1005 K st.,	Sacramento, Cal.
Miller, G. G.	901 Security Bldg.,	Los Angeles, Cal.
Miller, H. E.	P. O. Box 440,	Woodland, Cal.
Miller, H.	521 Pacific Bldg.,	San Francisco, Cal.
Miller, J. A.	655 Hyde st.,	San Francisco, Cal.
Miller, J. M.	410 C. and W. Bldg.,	Eugene, Ore.
Miller, O. L.	516 Sutter st.,	San Francisco, Cal.
Miller, S. W.	Twenty-third ave. and E. Fourteenth st.,	Oakland, Cal.
Miller, W. C.	711 Euclid ave.,	Los Angeles, Cal.
Milliken, H. L.	870 Third st.,	San Bernardino, Cal.
Milliken, J. D.	323 Geary st.,	San Francisco, Cal.
Millberry, A. H.	2792 California st.,	San Francisco, Cal.
Millberry, G. S.	Dental Dept., University of California,	San Francisco, Cal.
Millham, T. L.	1334 Gower st.,	Hollywood, Cal.
Minahen, G. E.	11 N. Hunter st.,	Stockton, Cal.
Minor, H. E.	305 G st.,	Eureka, Cal.
Minor, I. S.		Arcata, Cal.
Mitchell, A. B.	360 Wilcox Bldg.,	Los Angeles, Cal.
Mitchell, F. L.		Ontario, Cal.
Mitchell, F. W.		Venice, Cal.
Mitchell, H. B.	Hotel de Luxe,	Long Beach, Cal.
Mitchell, H. C.		Sanger, Cal.
Mitchell, M. N.	203 Davis st.,	San Leandro, Cal.
Mitchell, M. S.	213 Bergenline ave.,	Union Hill, N. J.
Mitchell, R.	529½ K st.,	Sacramento, Cal.
Moad, S. R.		Santa Cruz, Cal.
Mobley, W. G.	1429 Broadway,	Oakland, Cal.
Mohney, B. T.	15 Stockton st.,	San Francisco, Cal.
Mogan, C. J.	962 Phelan Bldg.,	San Francisco, Cal.
Molyneaux, W. M.	427 E St.,	San Diego, Cal.
Montfort, J. B.	Hollingsworth Bldg.,	Los Angeles, Cal.
Montague, J. S.	916 Van Nuys Bldg.,	Los Angeles, Cal.
Moody, G. R.	111 Ellis st.,	San Francisco, Cal.
Moore, E. F. (Mrs. Broad)	1026 Capp st.,	San Francisco, Cal.
Moore, J. E.		Watsonville, Cal.
Moore, J. F.	First National Bank Bldg.,	Oakland, Cal.
Moore, J. O.	304 Pacific Bldg.,	San Francisco, Cal.
Moore, H. W.	1513 State st.,	Santa Barbara, Cal.
Moore, H. W.	221 First National Bank Bldg.,	Oakland, Cal.
Moore, H. T.	391 Sutter st.,	San Francisco, Cal.
Moore, J. S., Jr.	212 E. Main st.,	Stockton, Cal.
Moore, G. W.	2490½ W. Washington st.,	Los Angeles, Cal.

Name.	Address.	City and State.
Moore, J. F.	916 Union st.	Alameda, Cal.
Moore, L. D.		Fillmore, Cal.
Moore, L. W.		Antioch, Cal.
Moore, R. I.	898 Dolores st.	San Francisco, Cal.
Moore, T. E.	2162 Center st.	Berkeley, Cal.
Moore, R.	2229 McDonald ave.	Richmond, Cal.
Moose, S. M.	323 Geary st.	San Francisco, Cal.
Mooslin, C. J. (Mrs. Eaton)	323 Geary st.	San Francisco, Cal.
Morehead, R. F.		Bakersfield, Cal.
Morey, C. L.	Dalziel Bldg.	Oakland, Cal.
Morey, G. A.	323 Geary st.	San Francisco, Cal.
Morffew, Thos.	323 Geary st.	San Francisco, Cal.
Morgan, A. N.		Brawley, Cal.
Morgan, F. E.		Santa Cruz, Cal.
Morgan, Harry	1128 Broadway	Oakland, Cal.
Morgan, T. H.	249 Pine ave.	Long Beach, Cal.
Mories, A. H.	1434½ Park st.	Alameda, Cal.
Morris, A.	146 Grant ave.	San Francisco, Cal.
Morris, E. H.	133 Geary st.	San Francisco, Cal.
Morris, J. I.	Head Bldg.	San Francisco, Cal.
Morris, R. C.		Chico, Cal.
Morris, R. W.	902 Haas Bldg.	Los Angeles, Cal.
Morris, W. J.	120 W. Vine st.	Redlands, Cal.
Morris, W. W.		Paso Robles, Cal.
Morris, T. H.	166 Geary st.	San Francisco, Cal.
Morrison, J. B.	407 Dodworth Bldg.	Pasadena, Cal.
Morrison, J. W.		Norwalk, Cal.
Morse, W. D.	Title Guarantee Bldg.	Los Angeles, Cal.
Morton, H. R., Jr.	551 Columbus ave.	San Francisco, Cal.
Morton, R. E.		Dinuba, Cal.
Mosher, G. E.	319 S. Central ave.	Glendale, Cal.
Mosher, G. H.	1404½ Millard ave.	Los Angeles, Cal.
Moss, A. E.	357 S. Spring st.	Los Angeles, Cal.
Moss, A. K.	357 S. Spring st.	Los Angeles, Cal.
Muegge, T. C.	909 Head Bldg.	San Francisco, Cal.
Mueller, A.	1854 W. Twelfth blvd.	Chicago, Ill.
Mutchmor, A. A.	532 Fifteenth st.	Oakland, Cal.
Mundell, W. A.	First National Bank Bldg.	San Francisco, Cal.
Mungen, W. W.	422 Mason Bldg.	Los Angeles, Cal.
Mulvihill, D. F.	2580 Mission st.	San Francisco, Cal.
Mulrenin, E. M.	3672 Twentieth st.	San Francisco, Cal.
Murchie, D. H.		Marysville, Cal.
Murphy, C. V.	9 Lincoln st.	Santa Cruz, Cal.
Murphy, R. N.	516 Sutter st.	San Francisco, Cal.
Murray, B. C.	500 Main st.	Porterville, Cal.
Musante, C. B.	1103 Valencia st.	San Francisco, Cal.
Musante, T. A.	P. O. Box 728	Tonopah, Nev.

N

Name.	Address.	City and State.
Nakamura, T.	1694 Post st.	San Francisco, Cal.
Nall, H. B.	301 First National Bank Bldg.	Long Beach, Cal.
Nance, E. F.	840 W. Seventh st.	Los Angeles, Cal.
Nash, D. E.	Garden City Bank Bldg.	San Jose, Cal.
Nasser, R. J.	507 Haight st.	San Francisco, Cal.
Nathan, E. W.	4073 Telegraph ave.	Oakland, Cal.
Neblett, J. W.	Seventh and Main sts.	Riverside, Cal.
Neel, R. E.	408 Grant Bldg.	Los Angeles, Cal.
Neel, W. E.	408 Grant Bldg.	Los Angeles, Cal.
Neelands, W. J.		Calipatria, Cal.
Neff, B. G.	1450 Fernside blvd.	Oakland, Cal.
Nelson, W. H.	892 Monterey st.	San Luis Obispo, Cal.
Nelson, R. W.	509A Fourth st.	Santa Rosa, Cal.
Neto, J. R.	306 Oakland Bank of Savings Bldg.	Oakland, Cal.
Neu, J. P.	224 Chronicle Bldg.	San Francisco, Cal.
Neubauer, F.	215 Wright and Callendar Bldg.	Los Angeles, Cal.
Neveloff, Dora	Brockman Bldg.	Los Angeles, Cal.
Newkirk, G.	Citizen's Bank Bldg.	Pasadena, Cal.
Newbre, R. B.		Fresno, Cal.
Newgarden, C.	564 W. One Hundred and Sixtieth st.	New York, N. Y.
Newman, H. C.	Marsh-Strong Bldg.	Los Angeles, Cal.
Ney, M. E.		Vallejo, Cal.

Name.	Address.	City and State.
Nichols, L. E.	310 Consolidated Realty Bldg.	Los Angeles, Cal.
Nicholson, U. H.	2128 Sunset blvd.	Los Angeles, Cal.
Nicolai, C. J.	391 Sutter st.	San Francisco, Cal.
Nixon, C. E.	1555 Broadway	San Francisco, Cal.
Noble, C. C.	514 Wright & Callendar Bldg.	Los Angeles, Cal.
Noble, C. S.		Arroyo Grande, Cal.
Noble, H. D.	323 Geary st.	San Francisco, Cal.
Nokes, I. D.	820 Marsh-Strong Bldg.	Los Angeles, Cal.
Nordlund, W. J.	529 Twelfth st.	Oakland, Cal.
Nor, A. C.	532 Fifteenth st.	Oakland, Cal.
Norman, C. O.	2597 Sutter st.	San Francisco, Cal.
Norman, Ida B.	814 Central ave.	San Francisco, Cal.
Novitzky, J. F.	401 Head Bldg.	San Francisco, Cal.
Norris, R. W.	4702 S. Hoover st.	Los Angeles, Cal.
Noxon, H. L.	Brockman Bldg.	Los Angeles, Cal.
Nuckolls, H. M.	P. O. Box 71	Turlock, Cal.
Nutter, B. S.	Commercial Savings Bank Bldg.	Stockton, Cal.
Numbers, A. B. H.	308 Frost Bldg.	Los Angeles, Cal.
Numbers, S. G.	308 Frost Bldg	Los Angeles, Cal.

O

Name.	Address.	City and State.
Oates, J. A.	519 Beacon st.	San Pedro, Cal.
O'Brien, E. W.	Sixth st. and MacDonald ave.	Richmond, Cal.
O'Brien, J.	6A Avenida Sur, No. 32	Guatemala, C. A.
O'Brien, W. F.	309 Harrison ave.	Leadville, Colo.
O'Connell, G. D.	162 Post st.	San Francisco, Cal.
O'Connell, R. E.	162 Post st.	San Francisco, Cal.
O'Connell, T.	P. O. Box C	San Rafael, Cal.
Ochsner, F. T.	1005 K st.	Sacramento, Cal.
O'Connor, D. L.	P. O. Box 22	Fortuna, Cal.
O'Connor, P. H.	1010 Hibernian Bldg.	Los Angeles, Cal.
O'Connor, W. S.		Fortuna, Cal.
O'Connor, J. T.	2192 Shattuck ave.	Berkeley, Cal.
Odell, G. E.		Glendora, Cal.
Ogawa, E.		San Francisco, Cal.
Ogden, F. R.	314 Federal Realty Bldg.	Oakland, Cal.
Ogle, W. O.	3197 Twenty-second st.	San Francisco, Cal.
Ohea, G. H	1507 E. Fourteenth st.	San Leandro, Cal.
Okubo, I.	1765 Sutter st.	San Francisco, Cal.
Okuyoshi, I.	226½ E. First st.	Los Angeles, Cal.
Oka, N.	115½ S. San Pedro st.	Los Angeles, Cal.
O'Neil, G. E.	330 First National Bank Bldg.	Long Beach, Cal.
Orella, V. P.	1121 Washington st.	Oakland, Cal.
O'Rourke, Wm.	1557 Seventh st.	Oakland, Cal.
Orth, P. S.	American National Bank Bldg.	San Diego, Cal.
Osborne, A. H.	201 First National Bank Bldg.	Long Beach, Cal.
Osher, J. C.		Anaheim, Cal.
Osterheld, D., Jr.	836 W. Washington st.	Los Angeles, Cal.
Ostrom, D. A.	1026 Market st.	San Francisco, Cal.
Osenburg, E. E.		El Centro, Cal.
Osenburg, F. L.	Scripps Bldg.	San Diego, Cal.
Osborne, M. E. (Mrs. Masten)	957 Eighth st.	Oakland, Cal.
Owen, C. M.	1533 San Pablo ave.	Oakland, Cal.

P

Name.	Address.	City and State.
Packard, H. R.	29 Euclid ave.	Pasadena, Cal.
Packard, L. M.	602 Grant Bldg.	Los Angeles, Cal.
Packwood, L. R.	127 Forsyth Bldg.	Fresno, Cal.
Packson, E. S.		Redondo Beach, Cal.
Page, W. E.	3122½ S. Vermont ave.	Los Angeles, Cal.
Pague, F. C.	Head Bldg.	San Francisco, Cal.
Painter, E. D.	1118 J st.	Fresno, Cal.
Palmer, A. H.	630 Chamber Commerce Bldg.	Pasadena, Cal.
Palmer, F. M.	P. O. Box 27	Redondo Beach, Cal.
Palotay, J. F.	707 Auditorium Bldg.	Los Angeles, Cal.
Papandre, R. D.	1502 West st.	Oakland, Cal.
Parker, A. H.	610 Chamber Commerce Bldg.	Pasadena, Cal.
Parker, Chas. H.	88 Pacific ave.	Santa Cruz, Cal.
Parker, C. S.		Orange, Cal.
Parker, Painless	Dunn Bldg.	San Francisco, Cal.
Parker, F. M.	628 Auditorium Bldg.	Los Angeles, Cal.

Name.	Address.	City and State.
Parker, J. A.	240 Stockton st.,	San Francisco, Cal.
Parker, J. E.	210 Slavin Bldg.,	Pasadena, Cal.
Parker, J. P.	88 Pacific ave.,	Santa Cruz, Cal.
Parker, J. T., Jr.	208 Slavin Bldg.,	Pasadena, Cal.
Parker, J. T.	210 Slavin Bldg.,	Pasadena, Cal.
Parker, W. W.	10½ W. Main st.,	Alhambra, Cal.
Park, E. E.	Route 2, P. O. Box 410,	Santa Rosa, Cal.
Parks, E. C.	323 Geary st.,	San Francisco, Cal.
Parks, L. H.	1990 Sutter st.,	San Francisco, Cal.
Parr, J. T.	Bacon Bldg.,	Oakland, Cal.
Parsons, P. M.		Fruitvale, Cal.
Patterson, A. D.		Visalia, Cal.
Patterson, C. S.	1663 E. Florence ave.,	Los Angeles, Cal.
Patterson, J. L.	1325 Washington st.,	Oakland, Cal.
Patten, C. O.		Exeter, Cal.
Patton, M. A.	407½ N. Main st.,	Santa Ana, Cal.
Paul, J. E.	Spurgeon Bldg.,	Santa Ana, Cal.
Payette, A. A.	317 W. Sixth st.,	Los Angeles, Cal.
Payne, C. S.	1400 Jones st.,	San Francisco, Cal.
Payne, R. E.	146 Grant ave.,	San Francisco, Cal.
Pearce, B. F.	2143 Blake st.,	Berkeley, Cal.
Pearce, C. H.	701 Butler Bldg.,	San Francisco, Cal.
Pearce, F. B.	66 E. Santa Clara st.,	San Jose, Cal.
Pease, J. L.	Federal Realty Bldg.,	Oakland, Cal.
Peel, J. M.	323 Geary st.,	San Francisco, Cal.
Peebles, W. F.	107 W. First st.,	Los Angeles, Cal.
Pegot, L. C.	514 Butler Bldg.,	San Francisco, Cal.
Peck, N. S.		Merced, Cal.
Peck, H. P.		Petaluma, Cal.
Peisch, H. C.	Citizen's Savings Bank Bldg.,	Pasadena, Cal.
Penwarden, R. S.	511 Watts Bldg.,	San Diego, Cal.
Perry, J. C.	995 Market st.,	San Francisco, Cal.
Peoples, J. W.	P. O. Box 283,	Petaluma, Cal.
Peper, Wm.	1502 Sixth st.,	San Diego, Cal.
Pepper, C. F.	Ninth and Spring sts.,	Los Angeles, Cal.
Percival, W. G. M. M.	4200 Dalton ave.,	Los Angeles, Cal.
Perkins, E. W.	883 Market st.,	San Francisco, Cal.
Perkins, F. E.		Birmingham, Ala.
Perkins, H. F.	311 F st.,	Eureka, Cal.
Perkins, M. L.	2608 Mission st.,	San Francisco, Cal.
Perkins, P. J.	126 Stockton st.,	San Francisco, Cal.
Perkins, R. G.	1219 Fillmore st.,	San Francisco, Cal.
Perren, W. E.	701 Garden City Bank Bldg.,	San Jose, Cal.
Perrault, J. T.	1521 Schiller st.,	Alameda, Cal.
Perry, E. E.		Ross Valley, Cal.
Pertson, L. A.	1920 E. Fourth st.,	Los Angeles, Cal.
Peters, A. B.	516 Sutter st.,	San Francisco, Cal.
Peters, B. R.	391 Sutter st.,	San Francisco, Cal.
Peters, E. K.	J and Mariposa sts.,	Fresno, Cal.
Peters, Harry C.	323 Geary st.,	San Francisco, Cal.
Peters, Herman C.	717 Delta Bldg.,	Los Angeles, Cal.
Petterson, J. P. N.	412 W. Sixth st.,	Los Angeles, Cal.
Petersen, R. C.		Leviston, Idaho
Pescia, A. F.	625 Vallejo st.,	San Francisco, Cal.
Petray, H. C.	501 Thompson Bldg.,	Oakland, Cal.
Pfister, Jos.	126 Post st.,	San Francisco, Cal.
Phillips, C. E.	508 Rowell Bldg.,	Fresno, Cal.
Phillips, F. H.		Petaluma, Cal.
Phillips, H. J.	Kurfustendamm, 261,	Berlin W. 62, Ger.
Phillips, G. H.		Hanford, Cal.
Phillips, P. H.		Reno, Nev.
Phillips, W. R.	726 Pacific Bldg.,	San Francisco, Cal.
Pickett, B.	706 Watts Bldg.,	San Diego, Cal.
Pieper, E. O.	First National Bank Bldg.,	San Jose, Cal.
Piper, S. L.	509 Hearst Bldg.,	San Francisco, Cal.
Pirkey, F. Z.	244 Fifth st.,	Colusa, Cal.
Pirkey, M.	Lock Box 69,	Willows, Cal.
Pitres, E.	2202 Fillmore st.,	San Francisco, Cal.
Pitt, C. S.		Sebastopol, Cal.
Pitt, Clara M.		Sebastopol, Cal.
Place, L. M.	P. O. Box 71,	Palo Alto, Cal.
Platt, F. L.	323 Geary st.,	San Francisco, Cal.
Pletcher, C. B.	608 First Savings Bank Bldg,	Oakland, Cal.

Name.	Address.	City and State.
Pletcher, D. I.	18½ Pine ave.,	Long Beach, Cal.
Plunkett, J. A.	1108 E. Fourteenth st.,	Oakland, Cal.
Polin, O. M.		San Luis Obispo, Cal.
Pomeroy, G. E.	562 Ashbury st.,	San Francisco, Cal.
Pool, C. H.	Land Co. Bldg.,	Fresno, Cal.
Poplin, R. L.		Santa Paula, Cal.
Porter, C. B., Jr.	710 Butler Bldg.,	San Francisco, Cal.
Porter, E. M.		Napa, Cal.
Porter, Helen K.	227 W. Fortieth Place,	Los Angeles, Cal.
Porter, J. P.	301 Powell Bldg.,	San Francisco, Cal.
Porter, W. S.		Napa, Cal.
Porterfield, R. H.	2102 Market st.,	San Francisco, Cal.
Posner, M. M.	2431 Washington st.,	San Francisco, Cal.
Poston, C. P.	813 Union Savings Bank Bldg.,	Oakland, Cal.
Post, C. E.	126 Stockton st.,	San Francisco, Cal.
Post, F. S.		La Jolla, Cal.
Potter, F. W.		Anderson, Cal.
Powell, A. J.		Hayward, Cal.
Powell, Henry, Jr.		Hayward, Cal.
Powell, J. N.	133 Geary st.,	San Francisco, Cal.
Powers, E. G.	202 N. Main st.,	Los Angeles, Cal.
Powers, G. G.	5412½ S. Vermont ave.,	Los Angeles, Cal.
Power, R. H.		Imperial, Cal.
Poole, G. T.	604 Nineteenth st.,	San Francisco, Cal.
Prather, A. C.	Van Nuys Bldg.,	Los Angeles, Cal.
Pratt, E. W.	274 N. Fifth st.,	San Jose, Cal.
Price, J. T.	Sixth and Hill sts.,	Los Angeles, Cal.
Price, G. W.	356 S. Broadway,	Los Angeles, Cal.
Prince, A. D.	514 Divisadero st.,	San Francisco, Cal.
Prince, W. E.	1225 Broadway,	Oakland, Cal.
Proctor, D. A.	1308 Broadway,	Oakland, Cal.
Proll, R. B.	46 Kearney st.,	San Francisco, Cal.
Prosser, J. L.	1307 Broadway,	Oakland, Cal.
Pryor, C. E.		Taft, Cal.
Puckett, C. W.	Sunset blvd. and Echo Park ave.,	Los Angeles, Cal.
Pyle, F. S.	1107 Valencia st.,	San Francisco, Cal.

Q

Quinn, J. J.		Fall River Mills, Cal.

R

Rademacher, H.	806 Baker st.,	East Bakersfield, Cal.
Rader, G. O.	Hewes Bldg.,	San Francisco, Cal.
Ramirez, X. C.	Citizen's Savings Bank Bldg.,	Los Angeles, Cal.
Ramsey, W. W.	515 Third st.,	San Bernardino, Cal.
Randall, C. H.	323 Geary st.,	San Francisco, Cal.
Randall, O. F.		Collingwood East, B. C.
Rankin, J. H.	15 S. Main st.,	Santa Rosa, Cal.
Rankine, C. M.	105 W. Sixth st.,	Los Angeles, Cal.
Rannells, A. W.	Dunn Bldg.,	San Francisco, Cal.
Rankin, S. H.		Holtville, Cal.
Ransom, H. E.	424 S. Broadway,	Los Angeles, Cal.
Rantz, W. A.		Placerville, Cal.
Ratliff, C. P.		El Segundo, Cal.
Raugh, J. M.	207 Wright st.,	Santa Ana, Cal.
Rawlins, G. E.		Orland, Cal.
Rea, F. E.		Ukiah, Cal.
Rea, V. H.	35 Grove st.,	Elgin, Ill.
Read, E. T.	1436 F st.,	San Diego, Cal.
Reading, W. W.	Watts Bldg.,	San Diego, Cal.
Reamer, H.	314 Chamber Commerce Bldg.,	Pasadena, Cal
Redmond, J. J.	1003 Humboldt Bank Bldg.,	San Francisco, Cal.
Redmond, J. M.	307 Eighth ave.,	San Francisco, Cal.
Reed, C. W.		Santa Rosa, Cal.
Reed, J. T.	429 F st.,	San Diego, Cal.
Reed, L. A.		Mountain View, Cal.
Reed, U. D.	105 Wilson Bldg.,	Los Angeles,Cal.
Reed, A. R.	720 E. Holt ave.,	Pomona, Cal.
Rees, F. G.	3420 Sacramento st.,	Sacramento, Cal.
Reese, P. S.	412 W. Sixth st.,	Los Angeles, Cal.
Reeves, G. H.	2126½ W. Pico st.,	Los Angeles, Cal.

Name.	Address.	City and State.
Regnart, P. S.	404 Garden City Bank Bldg.,	San Jose, Cal.
Reich, C. L.		San Bruno, Cal.
Reid, E. C.		Corona, Cal.
Reid, W. C.		Madera, Cal.
Reid, W. T.		Fresno, Cal.
Reilly, C. F.	Rowell Bldg.,	Fresno, Cal.
Reiss, M.	110 Jones Bldg.,	Huntington Park, Cal.
Renwick, W. H.	I. O. O. F. Temple,	Sacramento, Cal.
Renwick, W. R.	Main and San Joaquin sts.,	Stockton, Cal.
Requa, H. D.	950 W. Twenty-third st.,	Los Angeles, Cal.
Reynolds, H. C.	282 University ave.,	Palo Alto, Cal.
Reynolds, H. F.	62 E. Colorado st.,	Pasadena, Cal.
Reynolds, P. R.	407½ N. Main st.,	Santa Ana, Cal.
Rheinschild, P. A.	L. A. Investment Bldg.,	Los Angeles, Cal.
Rhodes, A. D.	Third and Oregon sts.,	Santa Monica, Cal.
Rhodes, M. T.	422 First National Bank Bldg.,	Berkeley, Cal.
Rhone, C. E.	1020 W. P. Story Bldg.,	Los Angeles, Cal.
Rice, C. E.	218 Bradbury Bldg.,	Los Angeles, Cal.
Rice, E. V.		Covina, Cal.
Rice, F. B.	1047½ J st.,	Fresno, Cal.
Rice, G. F.		Downey, Cal.
Richards, C. W.	323 Geary st.,	San Francisco, Cal.
Richards, F. B.	107 W. First st.,	Los Angeles, Cal.
Richards, H. G.	328 Phelan Bldg.,	San Francisco, Cal.
Richards, J. I.	3396 Sixteenth st.,	San Francisco, Cal.
Richards, J. L.		Virginia, Minn.
Richards, W. F.	530 K st.,	Sacramento, Cal.
Richardson, C. C.		Chico, Cal.
Richardson, E. E.	2428 Bancroft Way,	Berkeley, Cal.
Richardson, G. L.	137 W. Main st.,	Santa Paula, Cal.
Richardson, L. E.	Sixth and Hill sts.,	Los Angeles, Cal.
Richert, J. A.	2608 Mission st.,	San Francisco, Cal.
Rideout, W. E.		Newcastle, Cal.
Rietz, H. C.	921½ K st.,	Sacramento, Cal.
Rietzke, G.	Pacific Bldg.,	San Francisco, Cal.
Riggs, W. A.	4721½ S. Vermont ave.,	Los Angeles, Cal.
Rimmer, W. H.	1495 W. Fourth st.,	Riverside, Cal.
Rinebold, J. J.		Etna Mills, Cal.
Ritz, R. A.	222 Twenty-fifth ave.,	San Francisco, Cal.
River, J. P.		Pittsburg, Cal.
Rives, M. E.		Rio Vista, Cal.
Roberts, A. F.	65 E. Colorado st.,	Pasadena, Cal.
Roberts, C. A.	503 Garden City Bank Bldg.,	San Jose, Cal.
Roberts, C. M.	65 E. Colorado st.,	Pasadena, Cal.
Roberts, D. E.		Murphys, Cal.
Roberts, E. K.		Ventura, Cal.
Roberts, N. J.	101 S. Sheridan Road,	Waukegan, Ill.
Robertson, John		Napa, Cal.
Robinson, E. J.	Second and F sts.,	Eureka, Cal.
Robinson, R. D.	1110 Marsh-Strong Bldg.,	Los Angeles, Cal.
Robinson, R. R.	1012 Garland Bldg.,	Los Angeles, Cal.
Robinson, W. H.	1325 Park st.,	Alameda, Cal.
Robinson, Wilfred H.	Sixteenth st. and San Pablo ave.,	Oakland, Cal.
Rockfellow, J. A.		Sisson, Cal.
Roche, G. W. W.	1026 Market st.,	San Francisco, Cal.
Roche, H. N.	Hewes Bldg.,	San Francisco, Cal.
Rodda, G. S.	922½ J st.,	Sacramento, Cal.
Rodden, G. F.	Liebes Bldg.,	San Francisco, Cal.
Rodolph, F. E.		Mill Valley, Cal.
Rodgers, H. B.		Watsonville, Cal.
Rogers, E. J.		Kennett, Cal.
Rogers, Guy	1831 Chester ave.,	Bakersfield, Cal.
Rogers, T. L.	2446 Channing Way,	Berkeley, Cal.
Rogers, W. W.	100 E. Colorado st.,	Pasadena, Cal.
Rohner, F.	133 Geary st.,	San Francisco, Cal.
Rohrer, E. J.		Highland, Cal.
Roller, O. P.	609 Consolidated Realty Bldg.,	Los Angeles, Cal.
Romaine, C.	213 Story Bldg.,	Los Angeles, Cal.
Ronna, J.	Third and E sts.,	San Bernardino, Cal.
Rood, R. A.	832 Fifth st.,	San Diego, Cal.
Rose, F. N.	306 Chronicle Bldg.,	San Francisco, Cal.
Rosen, B.	501 Westbank Bldg.,	San Francisco, Cal.
Rosenbaum, A. M.	505 Los Angeles Investment Bldg.,	Los Angeles, Cal.

Name.	Address.	City and State.
Roper, R. J.	3 Lawlor Block,	Prescott, Ariz.
Rosenquist, A. C.	Sixth and Hill sts.,	Los Angeles, Cal.
Ross, D. H.	85 S. First st.,	San Jose, Cal.
Ross, F. A.	E. First and Cumming sts.,	Los Angeles, Cal.
Ross, J. L.	447 Spreckels Bldg.,	San Diego, Cal.
Ross, W. E.	1003 Thompson Bldg.,	Oakland, Cal.
Ross, G. C.	Spurgeon Bldg.,	Santa Ana, Cal.
Ross, J. R.	Story Bldg.,	Los Angeles, Cal.
Rossiter, V. A.		Santa Ana, Cal.
Rothenberg, I.	1670 Ellis st.,	San Francisco, Cal.
Roudebush, L. F.		Poplar Bluff, Mo.
Rowe, F. M.	1005 Market st.,	San Francisco, Cal.
Rowland, C. W.		Los Angeles, Cal.
Ruddy, L. M.	Second st. and Broadway,	Los Angeles, Cal.
Rudee, H. E.	323 Geary st.,	San Francisco, Cal.
Rudee, M. C.	102 Carl st.,	San Francisco, Cal.
Rudy, L. N.	Rudy Block,	Glendale, Cal.
Ruff, G. M.		Safford, Ariz.
Rule, R. W.	714 Oakland Bank of Savings Bldg.,	Oakland, Cal.
Rulofson, A. C., Jr.	135 Stockton st.,	San Francisco, Cal.
Rush, T. J.	902½ Ferguson st.,	Los Angeles, Cal.
Rust, A. J.	306 Higgins Bldg.,	Los Angeles, Cal.
Russell, C. D.		Azuza, Cal.
Ryan, H. G.	323 Geary st.,	San Francisco, Cal.

S

Name.	Address.	City and State.
Sabichi, J. R.		The Palms, Cal.
Salisbury, S. E.		Monrovia, Cal.
Salmon, W. S.	210 Timken Bldg.,	San Diego, Cal.
Samuels, H. J.	604 Dalziel Bldg.,	Oakland, Cal.
Samuels, L. G.	3003 Fillmore st.,	San Francisco, Cal.
Sams, H. L.	391 Sutter st.,	San Francisco, Cal.
Sandel, H.	Masonic Bldg.,	Silverton, Ore.
Sands, D. S.	Wright & Callender Bldg.,	Los Angeles, Cal.
Sanderson, A. L.	19 B st.,	San Mateo, Cal.
Sargent, Ray		Provost-Alberta, Canada
Sargent, W. E.		Gettysburg, S. D.
Sarkisian, H. M.	1920 Mariposa st.,	Fresno, Cal.
Sarll, F. E.		Madera, Cal.
Sato, H.	428 K st.,	Sacramento, Cal.
Savage, A. H.	501 Garland Bldg.,	Los Angeles, Cal.
Savage, C. W.	2339 Ward st.,	Berkeley, Cal.
Savage, F. L.		Livermore, Cal.
Savage, S. L.		Livermore, Cal.
Saville, B. G.	Fifth and F sts.,	San Diego, Cal.
Saul, O. M.	804 Clement st.,	San Francisco, Cal.
Saxby, J. B.	1233½ State st.,	Santa Barbara, Cal.
Saxe, F. J.	1322 Broadway,	Oakland, Cal.
Schafhirt, J. B.	Fourteenth st. and Broadway,	Oakland, Cal.
Scannavino, J. A.	346 Columbus ave.,	San Francisco, Cal.
Schacht, C. W.		Jackson, Cal.
Schmidt, C. W.	Oakland Bank of Savings Bldg.,	Oakland, Cal.
Schmidt, G. L.	Oakland Bank of Savings Bldg.,	Oakland, Cal.
Schmohl, L. W.	1062 Divisadero st.,	San Francisco, Cal.
Schaefer, S. G.	202 Laughlin Bldg.,	Los Angeles, Cal.
Schiffman, W. W.	427 S. Main st.,	Los Angeles, Cal.
Schieck, A. G.	960 E. Fourteenth st.,	Oakland, Cal.
Schildwachter, F. D.	208 Security Bldg.,	Los Angeles, Cal.
Schildwachter, H. B.		Compton, Cal.
Schildwachter, G. H.		Watts, Cal.
Schildwachter, L. C.	4528 Compton ave.,	Los Angeles, Cal.
Schiller, M.	American National Bank Bldg.,	San Diego, Cal.
Schillig, G. E.	201½ D st.,	Marysville, Cal.
Scheu, R. E.	708 Haight st.,	San Francisco, Cal.
Schlott, E. F.	701 Hayes st.,	San Francisco, Cal.
Schneider, E. F.	423 E. Main st.,	Stockton, Cal.
Schoenwald, O. A.	Pacific Bldg.,	San Francisco, Cal.
Schord, M. H.	162 Post st.,	San Francisco, Cal.
Schraft, A. C.	246 Powell st.,	San Francisco, Cal.
Schramm, W. C.	2841 Twenty-third st.,	San Francisco, Cal.
Schroeder, E. R.	2328 Santa Clara ave.,	Alameda, Cal.
Schroeder, H. C. H.	403 Divisadero st.,	San Francisco, Cal.

Name.	Address.	City and State.
Schroeder, R. A.	307 International Bank Bldg.,	Los Angeles, Cal.
Schumacher, F.	66 E. Santa Clara st.,	San Jose, Cal.
Schultz, C. H.	3004 Sixteenth st.,	San Francisco, Cal.
Schultz, J. J.	Twenty-second and Mission st.,	San Francisco, Cal.
Schulthies, C. F.	314 Federal Realty Bldg.,	Oakland, Cal.
Schuessler, R. W.	2311½ S. Vermont ave.,	Los Angeles, Cal.
Schuessler, A. J.	2411 Budlong ave.,	Los Angeles, Cal.
Schwaner, W. F.	204 Central Bank Bldg.,	Oakland, Cal.
Schwartz, R. H.	Redlick Block,	Bakersfield, Cal.
Schwartz, W. P.	1358 Fillmore st.,	San Francisco, Cal.
Schwarz, C. G.	577 Fourteenth st.,	Oakland, Cal.
Scott, C. W.	1353 Fruitvale ave.,	Oakland, Cal.
Scott, E. F.		Hollister, Cal.
Scott, E. S.	P. O. Box 554,	Fort Bragg, Cal.
Scott, E. W.	Pacific Bldg.,	San Francisco, Cal.
Scott, F. T.		Merced, Cal.
Scott, J. H.	306 Byrte Bldg.,	Sacramento, Cal.
Scott, M. E.	care Surgeon Gen., U. S. A.,	Washington, D. C.
Scott, S. B.	291 Geary st.,	San Francisco, Cal.
Scott, W. K.	3050 College ave.,	Berkeley, Cal.
Scovel, J. W.	care Surgeon Gen., U. S. A.,	Washington, D. C.
Scudder, R. C.	615 Consolidated Realty Bldg.,	Los Angeles, Cal.
Seager, H. L.	246 Powell st.,	San Francisco, Cal.
Seager, J. H.		Sebastopol, Cal.
Seely, M. J.	1991 Howard st.,	San Francisco, Cal.
Sehorn, W. A.		San Leandro, Cal.
Seibel, P. H.	350 Post st.,	San Francisco, Cal.
Seiferd, F. J.	881 Eddy st.,	San Francisco, Cal.
Seki, N.	1431 Tulare st.,	Fresno, Cal.
Senseney, H. E.	Eighth and Broadway,	Los Angeles, Cal.
Sevier, L. R.	720 Marsh-Strong Bldg.,	Los Angeles, Cal.
Sewell, P. P.	602 S. Alvarado st.,	Los Angeles, Cal.
Sexton, C. J.	Butler Bldg.,	San Francisco, Cal.
Seydel, F. W.	418 Second st.,	Chico, Cal.
Seymour, J. C.	1038 Fifth st.,	East San Diego, Cal.
Seymour, J. H.	636 S. Broadway,	Los Angeles, Cal.
Shaffer, H. M.	American Bank Bldg.,	Long Beach, Cal.
Shankey, W. G.	323 Geary st.,	San Francisco, Cal.
Shane, J. H.	721 Market st.,	San Francisco, Cal.
Shannon, H. R.	Citizens Bank Bldg.,	Kingman, Ariz.
Sharp, F. E.		Port Huron, Mich.
Sharp, J. G.	Butler Bldg.,	San Francisco, Cal.
Sharp, W. F.	Union Square Bldg.,	San Francisco, Cal.
Sharp, G. C.	Citizens Savings Bank Bldg.,	Pasadena, Cal.
Sharpe, T. W.	701 Stevens Bldg.,	Portland, Ore.
Shartel, W. W.	917 Trust and Savings Bldg.,	Los Angeles, Cal.
Shaw, A. A.	Story Bldg.,	Los Angeles, Cal.
Shaw, H. H.		Cambria, Cal.
Shaw, I. G.	1000 J st.,	Sacramento, Cal.
Shaw, J. F.	301½ Broad st.,	Nevada City, Cal.
Sheafer, J. G.	801 Ferguson Bldg.,	Los Angeles, Cal.
Shellhorn, A. L.	506 Wright and Callendar Bldg.,	Los Angeles, Cal.
Sheriff, E. W.	Granger Block,	San Diego, Cal.
Sherman, C. A.	676 Forty-second st.,	Oakland, Cal.
Sherman, L. A.		Pasadena, Cal.
Sherman, W. A.	427 E. Fifth st.,	Los Angeles, Cal.
Shepard, E. P.	441 Thirty-first ave.,	San Francisco, Cal.
Shepard, S. B.	1021 Tenth st.,	Sacramento, Cal.
Shepard, W.	1404 Park st.,	Alameda, Cal.
Shepherd, G. F.		San Leandro, Cal.
Shepherd, H. B.	1156 Central ave.,	Los Angeles, Cal.
Sheppard, H. M.	P. O. Box 67,	Middletown, Cal.
Sheppard, R. H.		Redding, Cal.
Shields, J. E.	1007 Fifth st.,	San Diego, Cal.
Shiina, T.	105 E. First st.,	Los Angeles, Cal.
Shirley, R. E.	1751 Market st.,	San Francisco, Cal.
Shoaff, W. R.	212 Wilcox Bldg.,	Los Angeles, Cal.
Shoemaker, R. H.	308 St. Louis Block,	Pasadena, Cal.
Shoemaker, H. O.	1403 Clement st.,	San Francisco, Cal.
Shores, F. W.	310 Union Savings Bank Bldg.,	Oakland, Cal.
Short, E. N.	Phelan Bldg.,	San Francisco. Cal.
Shuey, G. E.	1205 E. Fourteenth st.,	Oakland, Cal.
Shuin, M.	266 Seventh st.,	Oakland, Cal.

Name.	Address.	City and State.
Shumard, E. C.		Coalinga, Cal.
Sibley, R. R.	307 B st.,	San Mateo, Cal.
Sibley, W. E.	218 Bradbury Bldg.,	Los Angeles, Cal.
Sichel, H.	291 Geary st.,	San Francisco, Cal.
Sichel, L.	209 Post st.,	San Francisco, Cal.
Siewert, A. D.	1242 E. Colorado st.,	Pasadena, Cal.
Sikora, P. F.	3296 Mission st.,	San Francisco, Cal.
Silva, S. J.	First National Bank Bldg.,	Oakland, Cal.
Silverberg, H. M.	Seventh st. and Broadway,	Los Angeles, Cal.
Simms, J. B.		Modesto, Cal.
Simms, T. F.		Modesto, Cal.
Simms, W. E.		Kingsbury, Cal.
Simmons, B. F.	The Townsend,	Oakland, Cal.
Simmons, W. A.		Folsom, Cal.
Simmons, W. H.	1225 Broadway,	Oakland,Cal.
Simons, B. R.	735 Arch st.,	Philadelphia, Pa.
Simonton, F. V. A.		San Quentin, Cal.
Simpson, A. L.	121 Broadway,	San Diego, Cal.
Simpson, G. W.	1029 Chapala st.,	Santa Barbara, Cal.
Simpson, J. H.		Greenville, Cal.
Sinclair, L. W.	502 O. T. Johnson Bldg.,	Los Angeles, Cal.
Singleton, W. E.	621 S. Spring st.,	Los Angeles, Cal.
Sinton, W. E.		Eureka, Cal.
Sisson, E. K.	273 B st.,	San Mateo, Cal.
Sitherwood, D. L.		Bakersfield, Cal.
Skelly, E.	3468 Mission st.,	San Francisco, Cal
Skinner, C. G.	630 I. W. Hellman Bldg.,	Los Angeles, Cal.
Skinner, R. B.	204 Long Beach Bank Bldg.,	Long Beach, Cal.
Sloan, J. H.	412 Security Bldg.,	Los Angeles, Cal.
Smale, J. Y.	918 I. N. Van Nuys Bldg.,	Los Angeles, Cal.
Smith, A. B.	1020 Broadway,	Oakland, Cal.
Smith, A. D.	Care G. C. Gainsley,	Inglewood, Cal.
Smith, A. J.	4046 Piedmont ave.,	Oakland, Cal.
Smith, A. L.		Monrovia, Cal.
Smith, C. C.	1253 Fedora st.,	Los Angeles, Cal.
Smith, C. D.		Angels Camp, Cal.
Smith, C. E.	State Bank Bldg.,	Pomona, Cal.
Smith, C. H.	2298 Market st.,	San Francisco, Cal.
Smith, C. L.	139½ E. Kern st.,	Tulare, Cal.
Smith, E. G.	2328 Santa Clara ave.,	Alameda, Cal.
Smith, F. J.	6 S. First st.,	San Jose, Cal.
Smith, G. H.		Sausalito, Cal.
Smith, G. V.	509 Watts Bldg.,	San Diego, Cal.
Smith, G. W.		Virginia, Ill.
Smith, Harry D.	1912 Encinal ave.,	Alameda, Cal.
Smith, H. S.	Timken Bldg.,	San Diego, Cal.
Smith, H. B.		Sonora, Cal.
Smith, H. A.	Sixth and Hill sts.,	Los Angeles, Cal.
Smith, H. S.		Mojave, Cal.
Smith, H. O.	719½ K st.,	Sacramento, Cal.
Smith, I. L.	1955A E. First st.,	Los Angeles, Cal.
Smith, J. C.		Merced, Cal.
Smith, J. G.	306 O. T. Johnson Bldg.,	Los Angeles, Cal.
Smith, J. H.	Hewes Bldg.,	San Francisco, Cal.
Smith, J. McC.		Alturas, Cal.
Smith, J. W.	529½ K st.,	Sacramento, Cal.
Smith, L. T.	305 First National Bank Bldg.,	San Jose, Cal.
Smith, M. E.	739 Market st.,	San Francisco, Cal.
Smith, N. R.	Bank of Santa Monica Bldg.,	Santa Monica, Cal.
Smith, Robt.	301 Forum Bldg.,	Sacramento, Cal.
Smith, R. E.	719½ K st.,	Sacramento, Cal.
Smith, R. F.	1576 O'Farrell st.,	San Francisco, Cal.
Smith, S. A.	1027 Fifth st.,	San Diego, Cal.
Smith, T. M.	101 Post st.,	San Francisco, Cal.
Smith, T. S.	Head Bldg.,	San Francisco, Cal.
Smith, W. A.	360 Wilcox Bldg.,	Los Angeles, Cal.
Smith, W. S.	3282 E. Fourteenth st.,	Oakland, Cal.
Smith, W. C.	545 Chamber Commerce Bldg.,	Pasadena, Cal.
Smith, W. H.		Los Angeles, Cal.
Smyth, T. U.	240 Stockton st.,	San Francisco, Cal.
Smyth, W. J.	808 Union Savings Bank Bldg.,	Oakland, Cal.
Smithers, J. E. H.	1515 State st.,	Santa Barbara, Cal.
Snavely, A. C.	2305½ S. Union ave.,	Los Angeles, Cal.

Name.	Address	City and State.
Snavely, M. E.	Adams st. and Central ave.,	Los Angeles, Cal.
Snell, E. W.	Mission Savings Bank Bldg.,	San Francisco, Cal.
Snell, Edward		Hollister, Cal.
Snipes, C. L.		Clarksdale, Ariz.
Snook, J. C.	P. O. Box 93,	National City, Cal.
Snow, F. T.	53 S. First st.,	San Jose, Cal.
Snodgrass, E. F.	710 Story Bldg.,	Los Angeles, Cal.
Snyder, G. A.	Garden and Marsh sts.,	San Luis Obispo, Cal.
Sobey, A. L.	First National Bank Bldg.,	Berkeley, Cal.
Sobey, A. W.	323 Geary st.,	San Francisco, Cal.
Soher, H. C.	530 Phelan Bldg.,	San Francisco, Cal.
Solley, A. A.	135 Stockton st.,	San Francisco, Cal.
Somerset, J. C.	146 Grant ave.,	San Francisco, Cal.
Somerville, J. A.	1104 E. Washington st.,	Los Angeles, Cal.
Sontheimer, A. R.	1211 Broadway,	Oakland, Cal.
Sorensen, H. W.	520 Rowell Bldg.,	Frensno, Cal.
Soule, S. H., Jr.	208 Grant Bldg.,	Los Angeles, Cal.
Southworth, S. S., Sr.		Bolinas, Cal.
Spangler, N. R.	1225 Washington st.,	Oakland, Cal.
Sparks, A. E.	1530 San Pablo ave.,	Oakland, Cal.
Sparks, E. F. K.	910 Security Bldg.,	Los Angeles, Cal.
Sparks, P. A.	1711 Howard blvd.,	Los Angeles, Cal.
Spare, H. I.	25 Bancroft Way,	Berkeley, Cal.
Sparrvohn, H. R.	303 Equitable Savings Bank Bldg.,	Los Angeles, Cal.
Sparrow, W. J.		Weaverville, Cal.
Spates, A. P.	Los Angeles Investment Bldg.,	Los Angeles, Cal.
Spates, W. L.	306 Los Angeles Investment Bldg.,	Los Angeles, Cal.
Speer, A. H.	11 Pine ave.,	Long Beach, Cal.
Speer, G. B.	512 W. P. Story Bldg.,	Los Angeles, Cal.
Spencer, R. L.	Merchants National Bank Bldg.,	Los Angeles, Cal.
Spicer, P. F.	401 Long Beach Bank Bldg.,	Long Beach, Cal.
Spinks, A. M.	905 Security Bldg.,	Los Angeles, Cal.
Spinks, M. E.	1049 Orange st.,	Los Angeles, Cal.
Spinks, W. H.	910 Security Bldg.,	Los Angeles, Cal.
Sprague, G. H.	1065 E. Vernon ave.,	Los Angeles, Cal.
Sprake, W. T.		Cassleton, N. D.
Spratt, C. W.		Weaverville, Cal.
Squier, L. H.	1392 Haight st.,	San Francisco, Cal.
Squier, R. M.		Napa, Cal.
Staire, H. M.		Oxnard, Cal.
Staire, J. M.		Ventura, Cal.
Stamer, J. A.	111 S. San Joaquin st.,	Stockton, Cal.
Stalder, J. M.	1121 Washington st.,	Oakland, Cal.
Staley, F. G.		Los Angeles, Cal.
Stambaugh, C. D.	Consolidated Realty Bldg.,	Los Angeles, Cal.
Stanford, G. G.	1322 Broadway,	Oakland, Cal.
Stanton, J. C.		Fairfield, Cal.
Stapff, F. W.	816 Butler Bldg.,	San Francisco, Cal.
Stare, C. B.	609 Hollingsworth Bldg.,	Los Angeles, Cal.
Stark, T. A.	323 Geary st.,	San Francisco, Cal.
Stark, W.		Auburn, Cal.
St. Clair, J. A.		Newman, Cal.
Stealey, T. S.	562 Phelan Bldg.,	San Francisco, Cal.
Steele, J. F.	217 S. Flower st.,	Los Angeles, Cal.
Steinhilber, M. M. (Mrs. Proctor)		Torrance, Cal.
Steinmetz, H.	488 Thirteenth st.,	Oakland, Cal.
Steinwand, A. R.	P. O. Box 444,	Selma, Cal.
Steffan, J. F.	362 Baker st.,	San Francisco, Cal.
Stephens, C. J.	Shreve Bldg.,	San Francisco, Cal.
Stephenson, H. H.	Eighth and J sts.,	Sacramento, Cal.
Stern, L. A.		St. Helena, Cal.
Stern, H. S.	406 Head Bldg.,	San Francisco, Cal.
Stevens, A. J.	307 S. Broadway,	Los Angeles, Cal.
Stevens, Andrew Jackson	Sixth and Clement sts.,	San Francisco, Cal.
Stevens, C.	938 Lincoln st.,	Los Angeles, Cal.
Stevens, F. E.	205 Security Bldg.,	Los Angeles, Cal.
Stevenson, E. R.		Oakland, Ore.
Stevenson, H. H.	1119 Head Bldg.,	San Francisco, Cal.
Stevenson, J. E.	Majestic Theatre Bldg.,	Portland, Ore.
Stewart, A. B.	412 W. Sixth st.,	Los Angeles, Cal.
Stewart, C. L.		Grass Valley, Cal.
Stewart, G. H.	1121 Washington st.,	Oakland, Cal.
Stewart, Robt.		Quincy, Cal.

Name.	Address.	City and State.
Stewart, R. W.	First National Bank Bldg.,	Long Beach, Cal.
Stich, B. M.	1933 Ellis st.,	San Francisco, Cal.
Stickel, B. J.	2 Golden Gate ave.,	San Francisco, Cal.
Stickel, J. L.	1005 Market st.,	San Francisco, Cal.
Stickney, F. W.	1028 Market st.,	San Francisco, Cal.
Stiles, H.	2560 Mission st.,	San Francisco, Cal.
Stinson, C. G.	22 Fithian Bldg.,	Santa Barbara, Cal.
Stineman, J. H.		Roseville, Cal.
Stirling, M. G. F.	1005 Market st.,	San Francisco, Cal.
Stockman, D. D.	604 Auditorium Bldg.,	Los Angeles, Cal.
Stocking, C. H.	206 Mason Bldg.,	Los Angeles, Cal.
Stokes, A. W.	452 Lyon st.,	San Francisco, Cal.
Stokes, F. R.	1607 McAllister st.,	San Francisco, Cal.
Stokes, T. P.	Butler Bldg.,	San Francisco, Cal.
Stoll, B. F.	Hastings Bldg.,	San Francisco, Cal.
Stone, F. G.	343 S. Brand blvd.,	Glendale, Cal.
Stone, H. C.		Mountain View, Cal.
Stone, J. T.	159 Kentucky st.,	Petaluma, Cal.
Stone, R. B.	Dunn Bldg.,	San Francisco, Cal.
Stone, W. W.		Placerville, Cal.
Stonebrook, H. B.	Kinney-Kendall Bldg.,	Pasadena, Cal.
Stofflet, J. H.		Bishop, Cal.
Stoodley, G. F.	2500 Bancroft Way,	Berkeley, Cal.
Stover, W. T.	412 W. Sixth st.,	Los Angeles, Cal.
Stow, F. L.	1309 Washington st.,	Oakland, Cal.
Strasser, J. E.	622 S. Broadway,	Los Angeles, Cal.
Straub, H. E.	812 Story Bldg.,	Los Angeles, Cal.
Street, S. S.	412 W. Sixth st.,	Los Angeles, Cal.
Street, S. S.		Los Angeles, Cal.
Strickland, S. L.	2425 Fillmore st.,	San Francisco, Cal.
Strong, T. E.	1944 Fillmore st.,	San Francisco, Cal.
Strub, C. H.	260 Columbus ave.,	San Francisco, Cal.
Stryker, W. C.	Citizens Bank Bldg.,	Pasadena, Cal.
Stuttmeister, W. C.		Redwood City, Cal.
Suggett, A. H.	760 Butler Bldg.,	San Francisco, Cal.
Sullivan, A. S.	710 Hewes Bldg.,	San Francisco, Cal.
Sullivan, H. F.	1225 Broadway,	Oakland, Cal.
Sullivan, M. J.	525 Baker st.,	San Francisco, Cal.
Sullivan, T. X.	4096 Eighteenth st.,	San Francisco, Cal.
Sunderland, E.	601 Wright & Callendar Bldg.,	Los Angeles, Cal.
Sutherland, A. W.		Lindsay, Cal.
Sutherland, B. C.	Fifth and F sts.,	San Diego, Cal.
Sutliff, F. C.		Corning, Cal.
Summers, R. A.	First Savings Bank Bldg.,	Oakland, Cal.
Sumner, C. M.		Placerville, Cal.
Sutton, C. L.	905 State st.,	Santa Barbara, Cal.
Swain, E. M.		Elk Grove, Cal.
Swain, H.		Chico, Cal.
Swartz, R.		Coachella, Cal.
Swartwout, L. D.	Eighth st. and Broadway,	Los Angeles, Cal.
Sweetser, L. O.	2504 Sacramento st.,	San Francisco, Cal.
Sweet, H. A.		Gardnerville, Nev.
Swift, H. M.	412 Story Bldg.,	Los Angeles, Cal.
Swigert, G. O.		Belle Plaine, Kan.
Sykes, A. E.	Union Savings Bank Bldg.,	Oakland, Cal.
Sylvester, A. J.	1702 Polk st.,	San Francisco, Cal.
Sylvester, C. W.	536 S. Broadway,	Los Angeles, Cal.
Symington, W. H. L.	206 Juniphor Bldg.,	Santa Monica, Cal.
Symmes, C. W.	919 W. I. Hollingsworth Bldg.,	Los Angeles, Cal.
Symmons, S. J.	423 Central Bank Bldg.,	Oakland, Cal.

T

Name.	Address.	City and State.
Taber, M. E.	P. O. Box 1409,	Ocean Park, Cal.
Tabb, W. T.		Tuolumne, Cal.
Taft, F. D.	577 Fourteenth st.,	Oakland, Cal.
Tagg, P. A.	4704 E. Fourteenth st.,	Oakland, Cal.
Taggart, J. E.	139 Bank st.,	Burlington, Vt.
Tait, E. R.	Kearney and Market sts.,	San Francisco, Cal.
Tait, J. E.	602 Phenix Bldg.,	Butte, Mont.
Takagi, B. S. N.	105 E. First st.,	Los Angeles, Cal.
Talbott, H. I.	1007 Market st.,	San Francisco, Cal.
Talbott, J. L.		Lompoc, Cal.

Name.	Address.	City and State.
Tambling, A. R.	1309 Washington st.,	Oakland, Cal.
Tanaka, F. F.	103 N. Los Angeles st.,	Los Angeles, Cal.
Tanner, M. M.	656 Morgan Bldg.,	Portland, Ore.
Tashjian, V. A. K.		Fresno, Cal.
Tate, S. P.	1018 Washington st.,	Oakland, Cal.
Taylor, A. W.	2108 Shattuck ave.,	Berkeley, Cal.
Taylor, A. Q.	213 S. Broadway,	Los Angeles, Cal.
Taylor, C. G.	1005 Market st.,	San Francisco, Cal.
Taylor, F. M.		Ontario, Cal.
Taylor, F. S.	213 S. Broadway,	Los Angeles, Cal.
Taylor, H. H.	911 Watts Bldg.,	San Diego, Cal.
Taylor, H. L.	6139 Hollywood blvd.,	Hollywood, Cal.
Taylor, R. L.	P. O. Box 322,	San Anselmo, Cal.
Taylor, V. S.	Marine Bank Bldg.,	Long Beach, Cal.
Taylor, W. J.	902 Forum Bldg.,	Sacramento, Cal.
Taylor, W. N.		Plymouth, Cal.
Teague, F.	701 Phelan Bldg.,	San Francisco, Cal.
Tedford, W. G.		Taft, Cal.
Tegarden, J. W.	102½ N. Sixty-fourth ave.,	Los Angeles, Cal.
Tennyson, C. B.		Lodi, Cal.
Tennyson, H. A.	84 S. First st,.	San Jose, Cal.
Terry, C. H.	226 Pacific Bldg.,	San Francisco, Cal.
Terzian, P. G.	4466 Mission st.,	San Francisco, Cal.
Thatcher, J. W.	Market and Fifth sts.,	San Francisco, Cal.
Thatcher, H. M.	Market and Fifth sts.,	San Francisco, Cal.
Theller, E. A.	261 Pacific Bldg.,	San Francisco, Cal.
Therkof, G. A.		Livermore, Cal.
Therkof, G. H.	269 Dolores st.,	San Francisco, Cal.
Thomas, C. L.	516 Auditorium Bldg.,	Los Angeles, Cal.
Thomas, J. R.		Ukiah, Cal.
Thomas, M.	Griffith-McKenzie Bldg.,	Fresno, Cal.
Thomas, H. G.		Blythe, Cal.
Thomas, W. G.		Grass Valley, Cal.
Thompson, E. H.	1446 Grove st.,	San Diego, Cal.
Thompson, S. H.	4731 S. Vermont ave.,	Los Angeles, Cal.
Thompson, W. H.	413 Birks Bldg.,	Vancouver, B. C.
Thompson, W. S.	434 Georgia st.,	Vallejo, Cal.
Thornburg, F. S.	518 Chamber Commerce Bldg.,	Pasadena, Cal.
Thurston, G. W.		Elk, Cal.
Thurston, J. H.	Eighth st. and Broadway,	Los Angeles, Cal.
Tibbetts, A. L.	11 Main st.,	Petaluma, Cal.
Tibbetts, A. G.	505 S. Main st.,	Los Angeles, Cal.
Tierney, F. C.	3003 Grove st.,	Berkeley, Cal.
Tiffany, R. D.	6404 Hollywood blvd.,	Hollywood, Cal.
Timerman, E. C.	1327 Broadway,	Oakland, Cal.
Timmons, A. J.		Crisfield, Md.
Tizzard, S. B.	204 Mercantile Place,	Los Angeles, Cal.
Tobriner, M. L.	135 Stockton st.,	San Francisco, Cal.
Todd, Baxter	411 S. Fremont ave.,	Los Angeles, Cal.
Todd, C.	900 K st.,	Sacramento, Cal.
Todd, G. C.	606 Hill st.,	Los Angeles, Cal.
Todd, P. I.	411 S. Fremont ave.,	Los Angeles, Cal.
Todd, R. A.	618½ S. Main st.,	Corona, Cal.
Tolton, C. J.	1005 K st.,	Sacramento, Cal.
Tompkins, G. H.	1502 Twenty-third ave.,	Oakland, Cal.
Tomlinson, C. McR.	Georgeson Bldg.,	Eureka, Cal.
Toprahanian, A. G.		Imperial, Cal.
Toprahanian, H. G.	303 W. 122d st.,	New York, N. Y.
Torassa, G. L.	3750 Telegraph ave.,	Oakland, Cal.
Townsend, E. L.	321½ S. Hill st.,	Los Angeles, Cal.
Townsend, J. R.	1414 Iowa ave.,	Pasadena, Cal.
Townsend, W.		Burbank, Cal.
Towson, L.		Vacaville, Cal.
Toye, W. O.	1990 Sutter st.,	San Francisco, Cal.
Trafford, H. L.	708 Hollingsworth Bldg.,	Los Angeles, Cal.
Treen, R. deG.	2271 W. Twenty-fifth st.,	Los Angeles, Cal.
Treen, T. O.	1015 Story Bldg.,	Los Angeles, Cal.
Tremain, I. R.		Red Bluff, Cal.
Tremper, R. H.	302 N. Euclid ave.,	Ontario, Cal.
Trueman, H. G.	830 Market st.,	San Francisco, Cal.
Trumpour, J. P.	1503 Divisadero st.,	San Francisco, Cal.
Truitt, S. P.		Pacific Grove, Cal.
Trumpower, C. M.	Pine and Ocean aves.,	Long Beach, Cal.

Name.	Address.	City and State.
Tryon, W. M.	409 Pacific Bldg.,	San Francisco, Cal.
Tucker, A. C.	Third and E sts.,	San Bernardino, Cal.
Tucker, I. L.		Oroville, Cal.
Tuckey, H. A.	209 Post st.,	San Francisco, Cal.
Tufts, J. B.	704 Butler Bldg.,	San Francisco, Cal.
Tufts. L.	506 Berkeley National Bank Bldg.,	Berkeley, Cal.
Turner, H. C.		San Andreas, Cal.
Turner, P. T.		Tracy, Cal.
Turner, R. L. H.	254 S. Broadway,	Los Angeles, Cal.
Turner, W. A.		Angels Camp, Cal.
Tully, C. F.	2201 Logan ave.,	San Diego, Cal.
Tuttle, O. S.		Santa Rosa, Cal.
Twiggs, W. A.	Schroth Bldg.,	San Francisco, Cal.
Tyrrell, A. H.		Orange, Cal.
Tyler, H. A.		Gardena, Cal.

U

Uhl, W. T.	105 W. Sixth st.,	Los Angeles, Cal.
Ulsteen, E. A.	1020 Broadway,	Oakland, Cal.
Underhill, E. C.	1632½ Trinity st.,	Los Angeles, Cal.
Unland, T. H.	408 Los Angeles Investment Bldg.,	Los Angeles, Cal.
Updyke, R. P.	906 Fair Oaks ave.,	South Pasadena, Cal.
Upton, E. A.	601 First National Bank Bldg.,	Oakland, Cal.
Urban, W. R.	1031 J st.,	Fresno, Cal.
Usher, C. W.	P. O. Box 452,	Coalinga, Cal.

V

Vahue, E. O.	Edgerly Bldg.,	Fresno, Cal.
Van Amringe, D. R.		Richmond, Cal.
Vanderhurst, A. S.	Hewes Bldg.,	San Francisco, Cal.
Van Crom, A. L.	1101½ Central ave.,	Los Angeles, Cal.
Vanderlip, G. G.	707 Fourth st.,	San Rafael, Cal.
Vandever, G. Y.	Butler Bldg.,	San Francisco, Cal.
Van Orden, G. N.	812 Shreve Bldg.,	San Francisco, Cal.
Van Orden, Lincoln	814 Shreve Bldg.,	San Francisco, Cal.
Van Orden, Leander	812 Shreve Bldg.,	San Francisco, Cal.
Van Vleck, J. D.	239 W. Twenty-eighth st.,	Los Angeles, Cal.
Van Schoick, C. H.	219 Main st.,	Colfax, Wash.
Van Winkle, W. D.	412 W. Sixth st.,	Los Angeles, Cal.
Van Wyck, Crittenden	240 Stockton st.,	San Francisco, Cal.
Varner, E. C.	610 American National Bank Bldg.,	San Diego, Cal.
Vawter, M. B.	317 S. Hill st.,	Los Angeles, Cal.
Veatch, H. C.	City Paris Bldg.,	San Francisco, Cal.
Vecki, V. J.		Danville, Cal.
Vicary, E. E.	4016 Piedmont ave.,	Oakland, Cal.
Victor, E. R.		Bakersfield, Cal.
Viersen, L. A.	603 Scripps Bldg.,	San Diego, Cal.
Viney, A. W.	Citizens Savings Bank Bldg.,	Pasadena, Cal.
Vogel, T. A.	708 Head Bldg.,	San Francisco, Cal.
Vogelman, A. R.	5690 San Pablo ave.,	Oakland, Cal.
Vogelman, D. J.	238 Georgia st.,	Vallejo, Cal.
Vogt, R. H.		Reedley, Cal.
Volk, M. H.	222 Granger Bldg.,	San Diego, Cal.
Voorhees, P.	702 S. Spring st.,	Los Angeles, Cal.

W

Wachs, M.	79 Bacon Bldg.,	Oakland, Cal.
Wachhorst, N. B.	1546 McAllister st.,	San Francisco, Cal.
Wadsworth, W. H.	2251 Telegraph ave.,	Berkeley, Cal.
Waddell, E. H.		Visalia, Cal.
Wagner, A. C. F. (Mrs. Easton)	St. Winifreds Hospital,	San Francisco, Cal.
Wagner, R.	326 W. Third st.,	Los Angeles, Cal.
Waggoner, L. B.	1012 Fifth st.,	San Diego, Cal.
Wake, C. H.	1143 W. Thirty-seventh Drive,	Los Angeles, Cal.
Wait, R. L.	918½ Sixth st.,	Sacramento, Cal.
Walk, J. J.	1544 Seventh st.,	Oakland, Cal.
Walker, C. B.	3754 S. Vermont ave.,	Los Angeles, Cal.
Walker, Luella Cool		Hayward, Cal.
Walker, L. A.	336 E. Main st.,	Stockton, Cal.

Name.	Address.	City and State.
Walker, G. H.	905 Brockman Bldg.,	Los Angeles, Cal.
Walker, T. R.	926 Chester st.,	Oakland, Cal.
Walder, H.		San Anselmo, Cal.
Wall, A. C.	P. O. Box 648,	Honolulu, T. H.
Wallace, A. H.	First National Bank Bldg.,	Oakland, Cal.
Wallace, A. C.	133 Geary st.,	San Francisco, Cal.
Wallace, L. E.	1001 Valencia st.,	San Francisco, Cal.
Walsh, J. W.	5 N. Hunter st.,	Stockton, Cal.
Walsh, R. L.		Napa, Cal.
Walsh, W. E.	2410 Albatross st.,	San Diego, Cal.
Walter, C. F.		Bakersfield, Cal.
Walton, P. J.	3204 E. Fourteenth st.,	Oakland, Cal.
Walton, S. L.	San Jose Bank Bldg.,	San Jose, Cal.
Wanberg, G. E.	317 E. Philadelphia st.,	Whittier, Cal.
Wanz, A. H.	2801 Mission st.,	San Francisco, Cal.
Ward, A. W.	1262 Vallejo st.,	San Francisco, Cal.
Ward, H. B.	350 Post st.,	San Francisco, Cal.
Ward, J. N.		East Auburn, Cal.
Wardlaw, H. J.		Los Gatos, Cal.
Ware, W. H.	553 Belvedere st.,	San Francisco, Cal.
Warnekros, W. L.	831 State st.,	Santa Barbara, Cal.
Warren, F. L.	Eighth st. and Broadway,	Los Angeles, Cal.
Washburn, J. G.	102 W. Main st.,	Alhambra, Cal.
Wassilko, S.	2496 Mission st.,	San Francisco, Cal.
Wasson, J. C.		Campbell, Cal.
Wassman, Max, Jr.	714 Market st.,	San Francisco, Cal.
Wassman, M.	714 Market st.,	San Francisco, Cal.
Watanabe, K.	506 Fifth st.,	San Diego, Cal.
Waterbury, J. E.	6422 Hollywood blvd.,	Hollywood, Cal.
Waterman, E. R.	Cohn Bldg.,	Stockton, Cal.
Watkins, F. D.		Napa, Cal.
Watkins, W. H.	532 Fifteenth st.,	Oakland, Cal.
Watson, J. W.		Santa Rosa, Cal.
Watson, S. E.	Watts Bldg.,	San Diego, Cal.
Watson, R. L.	307 Judge Bldg.,	Salt Lake City, Utah
Watts, L. W.	357 Twelfth st.,	Oakland, Cal.
Weaver, C. R.	192 Monterey st.,	Gilroy, Cal.
Weaver, K. K.		New Lebanon, Ohio
Weaverling, G. F. (Mrs. Harbour)	407 Temple Auditorium,	Los Angeles, Cal.
Webber, C. H.		Davis, Cal.
Webber, P. A.	Forum Bldg.,	Sacramento, Cal.
Webb, C. A.	612 Hollingsworth Bldg.,	Los Angeles, Cal.
Webster, F. E.		Suisun City, Cal.
Weirick, H. W.	503 Mechanics Bldg.,	San Francisco, Cal.
Weisbach, L. C.	Phelan Bldg.,	San Francisco, Cal.
Welch, H. S.	McNeece Bldg.,	San Diego, Cal.
Weldon, C. A.		Vacaville, Cal.
Wells, H. T.	335 Consolidated Realty Bldg.,	Los Angeles, Cal.
Wells, H. T.	1694 W. Twenty-third st.,	Los Angeles, Cal.
Wells, R. B.		Lakeport, Cal.
West, J. A.	Brockman Bldg.,	Los Angeles, Cal.
West, R. C.		Ferndale, Cal.
West, R. C.	601½ K st.,	Sacramento, Cal.
West, R. F.		Willows, Cal.
Westerfeld, F.		Klamath Falls, Ore.
Weston, C. S.	Central Bank Bldg.,	Oakland, Cal.
Weston, H.		Petaluma, Cal.
Wessell, G. W.		Santa Monica, Cal.
Westphal, E. W.	Schroth Bldg.,	San Francisco, Cal.
Westphal, O. F.	Lathrop Bldg.,	San Francisco, Cal.
Wetherbee, J. W.	696½ S. Alvarado st.,	Los Angeles, Cal.
Wheeler, T. R.		Quincy, Cal.
Whelan, W. A.	637 W. Sixteenth st.,	Los Angeles, Cal.
Whelan, W. F.		Santa Monica, Cal.
Whetstone, L. S.	231½ Morrison st.,	Portland, Ore.
Whinnery, J. K.	First National Bank Bldg.,	San Jose, Cal.
Whitaker, F. A.	103 Campbell Bldg.,	Victoria, B. C.
Whitcomb, S. E.	1647 Haight st.,	San Francisco, Cal.
White, A. L.	4115 Telegraph ave.,	Oakland, Cal.
White, Alex.	900 Los Angeles Investment Bldg.,	Los Angeles, Cal.
White, A. T.	345 Chamber Commerce Bldg.,	Pasadena, Cal.
White, C. M., Jr.		Chico, Cal.
White, E. H.	1128 Broadway,	Oakland, Cal.

Name.	Address.	City and State.
White, Fillmore	168 Cart st.,	San Francisco, Cal.
White, G. A.	1233½ State st.,	Santa Barbara, Cal.
White, H. C.		Benicia, Cal.
White, J. J.	Fourteenth st. and Broadway,	Oakland, Cal.
White, J. F.	First National Bank Bldg.,	Oakland, Cal.
White, R. M.	510 Chamber Commerce Bldg.,	Pasadena, Cal.
White, L. A.	921½ K st.,	Sacramento, Cal.
White, L. L.		Gardena, Cal.
White, S. A.	1159 Masonic ave.,	San Francisco, Cal.
Whitley, C. H.	12 Geary st.,	San Francisco, Cal.
Whitman, E. W.	501½ K st.,	Sacramento, Cal.
Whitney, E. O.	240 Stockton st.,	San Francisco, Cal.
Whitson, L. L.	114½ W. Fourth st.,	Santa Ana, Cal.
Whitted, C.	117½ E. Fourth st.,	Santa Ana, Cal.
Whitted, R. E.	117½ E. Fourth st.,	Santa Ana, Cal.
Whomes, A.	424 S. Broadway,	Los Angeles, Cal.
Whomes, G.	424 S. Broadway,	Los Angeles, Cal.
Wiggins, C. G.		Colton, Cal.
Wilbur, P. S.	Eighteenth and Chester sts.,	Bakersfield, Cal.
Wilcox, W. C.	116 Utah st.,	San Francisco, Cal.
Wilcox, W. I.		Santa Clara, Cal.
Wilcoxon, C. R.	First National Bank Bldg.,	Woodland, Cal.
Wildanger, A. J.		Flint, Mich.
Wild, M. C.		Selma, Cal.
Wilder, D. R.	202½ S. Broadway,	Los Angeles, Cal.
Wilder, J. O.	Ninth and K sts.,	Sacramento, Cal.
Wilkins, F. E.		Tracy, Cal.
Wilkins, N. L.	206 Eleventh ave.,	San Francisco, Cal.
Wilkins, P. J.		Colusa, Cal.
Willard, S. S.		Corona, Cal.
Williams, E. G.	578 Forty-seventh st.,	Oakland, Cal.
Williams, E. G.	Blodgett Bldg.,	Lodi, Cal.
Williams, C. C.	Edgerly Bldg.,	Fresno, Cal.
Williams, C. E.	1112 Title Insurance Bldg.,	Los Angeles, Cal.
Williams, Carlos		East Auburn, Cal.
Williams, F. A.	412 W. Sixth st.,	Los Angeles, Cal.
Williams, F. E.	438 Consolidated Realty Bldg.,	Los Angeles, Cal.
Williams, J. E.	2181 Fillmore st.,	San Francisco, Cal.
Williams, J. J.		Pacific Grove, Cal.
Williams, J. K.	Sixth and Hill sts.,	Los Angeles, Cal.
Willey, H. D.	3222 E. Fourteenth st.,	Oakland, Cal.
Willsey, T. F.	Main and Second sts.,	Napa, Cal.
Willoughby, C. E.	1233½ State st.,	Santa Barbara, Cal.
Wilson, C. E.	323 Geary st.,	San Francisco, Cal.
Wilson, F. W.		Willits, Cal.
Wilson, G. B.		Jamestown, Cal.
Wilson, G. H.	708 Story Bldg.,	Los Angeles, Cal.
Wilson, H. D.	Merchants National Bank Bldg.,	Los Angeles, Cal.
Wilson, W. E.	450 Spreckels Bldg.,	San Diego, Cal.
Wilson, John M.	920 Fifth st.,	San Diego, Cal.
Wilson, J. F.		Jackson, Cal.
Wilson, N. K.	5663 Shafter ave.,	Oakland, Cal.
Wilson, L. S.	622 S. Broadway,	Los Angeles, Cal.
Wilson, O. T.	473 Fourteenth st.,	Oakland, Cal.
Wilson, W. C.		Gridley, Cal.
Wing, Geo.		Reedley, Cal.
Wing, Wm.		Madera, Cal.
Winning, W. P.	2135 Fresno st.,	Fresno, Cal.
Wise, C. F.	1225 Washington st.,	Oakland, Cal.
Wise, Fannie E. Scott	1225 Washington st.,	Oakland, Cal.
Wishard, F. G.	39 W. Colorado st.,	Pasadena, Cal.
Withee, U. V.	300 Pantages Theater Bldg.,	Los Angeles, Cal.
Wismer, P.	110 Cedar st.,	Glendale, Cal.
Witty, J. W.	1835 Oxford ave.,	Los Angeles, Cal.
Woehl, H. J.	care of H. M. Warden, Jr.,	San Luis Obispo, Cal.
Wolfe, F. DeK.	133 Forsyth Bldg.,	Fresno, Cal.
Wood, C. C.	P. O. Box 349,	Oakdale, Cal.
Wood, Wm.		Cedarville, Cal.
Woodruff, W. B.	506 First National Bank Bldg.,	Long Beach, Cal.
Wool, R. E.		Brawley, Cal.
Woolsey, E. G.		Ione, Cal.
Woolsey, R. I.	First National Bank Bldg.,	Berkeley, Cal.
Woolley, P. J.		Sunnyvale, Cal.

Name.	Address.	City and State.
Worrall, G. H.	1085 Santa Clara st.,	Santa Clara, Cal.
Worth, C. E.	402 Consolidated Realty Bldg.,	Los Angeles, Cal.
Worthington, Mazie	Nineteenth and H sts.,	Bakersfield, Cal.
Worthington, Jean I. (Mrs. Bennett)		Oil Center, Cal.
Worthy, C. B.	536 S. Hope st.,	Los Angeles, Cal.
Wren, J. S.		Susanville, Cal.
Wright, A. H.	245½ S. Spring st.,	Los Angeles, Cal.
Wright, A. O.	Oakland Bank of Savings Bldg.,	Oakland, Cal.
Wright, R. B.	274 Bacon Bldg.,	Oakland, Cal.
Wright, W. C.	710 Butler Bldg.,	San Francisco, Cal.
Wright, W. S.		Lompoc, Cal.
Wrigley, A. E.	516 Fourth st.,	Eureka, Cal.
Wrigley, G. E.		Dixon, Cal.
Wuillemin, P. M.	440 Broadmore blvd.,	San Leandro, Cal.
Wyman, Mattie K.	901 Northern Bank Bldg.,	Seattle, Wash.
Wymore, G. H.	R. F. D. No. 5,	Santa Rosa, Cal.
Wylie, E. J.	908 Hollingsworth Bldg.,	Los Angeles, Cal.
Wyatt, C. W.	323 Geary st.,	San Francisco, Cal.

Y

Name.	Address.	City and State.
Yates, E. W.	P. O. Box 335,	Sawtelle, Cal.
Yamamote, T.	1408A Geary st.,	San Francisco, Cal.
Yant, G. A.	731 Eighteenth st.,	Denver, Colo.
Yawata, T.	335A Seventh st.,	Oakland, Cal.
Yant, Henry	P. O. Box 242,	Leadville, Colo.
Yee, J. T.	679 Broadway,	San Francisco, Cal.
Yemen, J. P.	P. O. Box 18,	Yuma, Ariz.
Yelland, A. S.	3037 Sixteenth st.,	San Francisco, Cal.
Young, C. E.	830 Market st.,	San Francisco, Cal.
Young, H. G.	1749 Polk st.,	San Francisco, Cal.
Young, J. E.	162 Post st.,	San Francisco, Cal.
Young, J. A.	44 Sefton Block,	San Diego, Cal.
Young, J. R.	P. O. Box 515,	Chico, Cal.
Young, R. J.		Tulare, Cal.
Young, R. L.	1536 W. Fifth st.,	Glendale, Cal.
Young, T. W.	703½ S. Broadway,	Los Angeles, Cal.
Younger, E. A.	609 Butler Bldg.,	San Francisco, Cal.
Yount, G. B.	10 Broadway,	Redwood City, Cal.
Yoshida, F. R.	327 E. First st.,	Los Angeles, Cal.
Yoshinaga, M.	1228½ Third st.,	Sacramento, Cal.
Yoshida, Y. B.		Stockton, Cal.

Z

Name.	Address.	City and State.
Ziegler, C. L.	135 Stockton st.,	San Francisco, Cal.
Zeller, M. J.	237 Post st.,	San Francisco, Cal.
Zellhoefer, C. C.	921 Park View st.,	Los Angeles, Cal.
Zimmerman, Allen		Santa Ana, Cal.

REPORT

OF THE

Reclamation Board of California

1916

California
State Printing Office
1916

23071

REPORT OF THE RECLAMATION BOARD OF CALIFORNIA

Honorable HIRAM W. JOHNSON,

Governor of California.

The State Reclamation Board offers for your consideration the following report of its activities from the date of its previous report, April 1, 1914, up to April 1, 1916, together with certain suggestions in the interest of the work in its charge.

The work of the board, as at present developed, has a threefold character.

Police Powers of Board.

First, it exercises unusual police powers conferred by the Reclamation Board Act in directing private reclamation so that it may not interfere with flood control or unnecessarily injure the safety of existing reclamation in the Sacramento and San Joaquin valleys. Under the law, plans for new levees or for change in old levees must receive the approval of the Reclamation Board before work thereon may commence. So, too, for bridges and roads crossing by-passes or overflow channels, and for works of any kind likely to interfere with flood flow, or to jeopardize reclamation works essential to the Sacramento River flood control project. The board has jurisdiction in these matters, not only along the Sacramento and San Joaquin rivers and on the tributaries thereof, but also in the adjoining basins.

Power is given to the board to enforce the construction of draws in highway and railroad trestles crossing the by-passes and overflow channels, wherever in its judgment such draws are necessary to allow the passage of dredges and other craft utilized in reclamation work. It is evident that prompt access to levees and reclamation works along the by-passes, as well as on the rivers, must be had in order to insure permanent protection to the flood control project and the interests served thereby.

In pursuance of that provision of the law, the Oakland, Antioch and Eastern Electric Railway has constructed a movable span with an opening of 80 feet in that portion of its trestle crossing the east borrow pit of the Yolo By-pass. A similar span of 70 feet width was placed, prior to the adoption of the law, in the trestle of the Sacramento and Woodland Railroad where it crosses this borrow pit. Similar provision has been made in the bridge crossing the canal between Districts 1000 and 1001, and similar provision will be made, under the board's order, in the new bridge which will be constructed by Yolo County across the mouth of Sycamore Slough, near Knights Landing.

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An 80-foot removable span has been constructed in the highway bridge crossing the Knights Landing Ridge Cut, under plans approved by the board.

The State Highway Commission has provided for a bascule bridge in its causeway where the same crosses the east borrow pit of the Yolo By-pass.

It has also left at the western end of such causeway a trestle which may be replaced in the future, if necessary, where it crosses the determined site of the western borrow pit of the by-pass, by a bascule bridge.

The trestle of the Southern Pacific Company, crossing the Yolo By-pass, had been constructed prior to the passage of the Reclamation Board Act and this board has been unable to induce that company to act in the matter of providing a draw in such trestle, unless the cost thereof is met by the district. Even should the Reclamation Board approve of the equity of so meeting the expense, there are no funds for the purpose.

In pursuance of this same police power, the board has ordered the removal of all trees from levees wherever they offer an element of danger; and has called attention to defective construction and dangerous conditions wherever they were found to exist, even where it lacked the power to enforce correction of the defects.

The board in the fall of 1915 entered into a contract with the Natomas company under which that company undertook to clear the Yolo By-pass, in the neighborhood of the Fremont Weir, of brush and trees, the work to be done under supervision of the Flood Control Engineer and to be paid for in warrants of the Sacramento and San Joaquin Drainage District, payable out of an assessment to be hereafter levied for the Yolo By-pass. This work was undertaken in order to prevent congestion of flood waters at the upper end of the Yolo By-pass with consequent danger to the river channel and reclaimed lands.

The work was practically completed before January 1, 1916, and the good effects are already apparent. It is desirable also to clear this by-pass each year through its entire length, of tule, by burning or otherwise. The run-off could be so improved thereby as to materially decrease the flood plane in the by-pass; but it can not be done in the absence of funds for the purpose, unless interested districts are willing to undertake the work, partly for their own protection, and to accept warrants in payment therefor. District 1500 proposes to do a certain amount of clearing in the Sutter By-pass. Similar choke conditions exist in the Butte By-pass and elsewhere, and material benefits could be secured in each case by clearing.

The ill effects of the independent method of reclamation, which was recognized by state law prior to the creation of the Reclamation Board are everywhere apparent. There are some large reclamation districts whose lines of levee have been so unwisely planned or placed, or improperly constructed, that these districts must either entirely change their plans or meet heavy annual expense to repair wash. There are certain districts whose levees have been so placed that no repair or construction, reasonably practical, can in the future, while the levees remain in that location, protect the districts from inundation. Levees have been so constructed on overflow channels as to cause ensmallment and choke of the channel at certain points, making inevitable a breach of the levee in heavy flood, on one side or the other. (''Overflow channel'' as used in this report has reference to the space left in places between the natural bank of the stream and the levee, to accommodate the excess flow in flood season.) Again, with the hope of saving an acreage of rich land, or because the river bank offered better foundation for a levee, levees have been constructed without proper berm on the water side, or without revetment, and are subject to such wave action and wash that they must be repaired every year at heavy expense, and perhaps ultimately moved further back. In many of these cases, if for any reason it was desirable or necessary to maintain the levee on or near the river bank, economy would have been served had such bank been strongly revetted.

There is apparent on the part of a number of reclamation districts and landowners a misconception as to the scope of the board's duties. It has been called upon for decision or relief in cases of difference between landowners in a district as to the internal administration of the affairs of such district. With such matters the board has nothing whatever to do, the intent of the law being evidently to allow the reclamation districts to administer their own affairs in the future as they have in the past, and to limit the jurisdiction of the Reclamation Board in connection with such districts to such supervision of district levee plans and construction as would safeguard the flood control project from interference, and other districts from danger or injury.

Flood Control in the San Joaquin.

The second element of the board's duties consists in promotion of a comprehensive flood control project for the San Joaquin River.

A certain amount of study has been given to this subject, but little could be done in advance of completion of surveys of the valley, which were undertaken in 1914, under joint action of the California Debris Commission, representing the federal government, and the State Engineering Department, representing the State of California. A fund of $64,557.00 was available for the purpose, half of which was appropriated by congress and the other half supplied by the State Engineering Department from its appropriation for river work.

Those surveys are now practically complete and the engineering force of the Reclamation Board is engaged in working up data to serve as basis for the comprehensive flood control project which will be worked out by the California Debris Commission, in conjunction with the State Engineering Department. As soon as that has been accomplished and a plan adopted, with means provided for carrying it out, either under joint federal and state action, or by the state alone, the Reclamation Board can proceed with the active promotion of those portions of the project which are necessary for the protection of existing districts.

Until such a plan has been formulated and adopted, the board is necessarily handicapped in granting permission for private reclamation projects in the San Joaquin Valley because of the possibility that they may interfere with such flood control plan when developed.

Kings River Diversion. The act of 1913 gave the board authority to prevent the diversion of waters from other streams into the San Joaquin or Sacramento, and complaint was made to the board that interested parties were diverting and had been diverting for many years, the waters of Kings River from the channel which they would naturally follow into the Tulare Lake, to a channel leading to the San Joaquin River. A number of hearings were held by the board in connection with this complaint. Suit was brought against the parties complained of in the Superior Court of San Joaquin County. The point was made, on a preliminary motion, that the Reclamation Board had no jurisdiction as to acts which occurred previous to August 10, 1913, the date on which the act conferring this power on the board, went into effect. The Superior Court, however, decided that the board's jurisdiction did extend to acts committed prior to that date, a point on which the board's advice had been to the contrary. As the alleged acts were distributed over a number of years and covered a large territory, it was apparent that the further prosecution of the suit would require a large expenditure of money, and the board was asked to levy an assessment on lands benefited to defray the expense of such prosecution. The lands within the district, which would be most seriously affected by a diversion of this water into the San Joaquin River, and which would be most benefited by the prevention of such diversion, and, therefore, should pay the heavier portion of the cost of the contemplated suit, are those located nearest Kings River. A very large proportion of these lands is owned by a single interest, which interest has brought suit against the Reclamation Board to prevent the collection by it of its assessment No. 1 for general administrative expenses, and in such suit has attacked the powers of the board and the constitutionality of the Reclamation Board Act. Under these circumstances, the board has deemed it advisable to delay further consideration of the request for an assessment for the purpose named until it is determined that the board has power to enforce the assessment.

There is a plan on foot for establishment of a large irrigation district and the construction of storage reservoirs to take care of the floods of the Kings River in the interest of irrigation. If carried out, this plan, it is claimed, would solve the flood control problem of the Kings River as well, and remove further cause for the pending action.

It should be said, however, that proper protection for reclamation in this portion of the San Joaquin Valley can not safely be made dependent upon these storage reservoirs unless it appear that they will be constructed within a reasonable time.

The Calaveras Problem. In the San Joaquin Valley, too, outside of the section now contained within the Sacramento and San Joaquin Drainage District, there is the problem of the floods of the Calaveras River, which threaten a serious menace to the city of Stockton. Those floods are at present being diverted to the north and west of the city and discharged into the San Joaquin River through the so-called diverting canal, completed by the federal engineers in 1910.

This diverting canal, while not ensuring entire safety to the city of Stockton, causes annual inundation of a large farming section outside of the city. Through her chamber of commerce and official representatives, Stockton came to the legislature of 1915 and asked that she be admitted to the Sacramento and San Joaquin Drainage district and placed under the jurisdiction of the Reclamation Board, believing that thereby, and only in this way, could she speedily and satisfactorily solve the Calaveras flood problem and provide means whereby the safety of the city of Stockton could be permanently assured. Because of a complication of issues, which are elsewhere referred to in this report, the legislature failed to comply with her request.

Freeport Levee Protection. The proposed work of levee protection on the Sacramento River at Freeport under the board's assessment No. 5, will very materially assist in securing protection to the reclamations in the northern part of the San Joaquin Delta.

Sacramento Flood Control Project.

The most important work of the Reclamation Board has been in promoting the prosecution of work on the Sacramento River flood control project, which constitutes the third element of the duties of the board. This has been done in various ways—by completing, in co-operation with the California Debris Commission, cross-section surveys of the basins and overflow channels, and adopting, with approval of federal and state engineers, necessary modifications of the original by-pass plan as tentatively proposed in the report of the Chief of Engineers, U. S. A., 1910; by approving the construction, by private districts, of river and by-pass levees necessary for reclamation of their own lands, but which are incidentally necessary parts of approved units of the flood control project; by itself undertaking field work where necessary in important matters; by securing desirable modifications of the law; by conducting a campaign of education among the people of the State and particularly of the Sacramento and San Joaquin Drainage District, so that their necessary co-operation might be had; by co-ordinating its work with that of the federal engineers and keeping nation, state and landowners in touch and harmony with each other.

In pursuance of its established policy, the board has invited and answered questions on all matters connected with the project and its duties, at the assessment hearings held in the various counties of the district; has initiated and held conferences with disaffected districts and organizations; and has used such avenues of publicity as are open to it in an attempt to keep the public generally advised as to the project and the board work in connection therewith. Its attorney has given much time to the curing of defects in the act of 1913. The result of his efforts show in the act of 1915, which was drawn by him.

The activities of the board have included several trips to Washington, undertaken by the president, without expense to the state for the overland travel, for the purpose of presenting phases of the project to the congressional committees, or to the board of engineers. Inspections of the project were secured during 1915 by legislative committees, by the Federal Board of Engineers, and by the Rivers and Harbors Committee.

Scope of the Sacramento Project.

The state, and even those citizens most directly interested, have only recently commenced to thoroughly appreciate the magnitude of the Sacramento River flood control project, and what it means in state development. In problems presented and solutions offered; in results promised to many interests—national, state and local; in the nature of the work and the expense involved, it is the greatest project, in progress or contemplated, west of the Missouri River, and is exceeded in the particulars named by but few projects in the United States.

The project is necessary, first, for restoration and maintenance of navigability in the Sacramento River. Ocean freighters came up the river to Sacramento City, 125 miles from the sea, several times during the high stage of water in 1914. Light draft craft originally ran up to Red Bluff, 200 miles above Sacramento, except in late summer and fall, but now go no further than Chico Landing, 141 miles above Sacramento City. The most favorable conditions indicated could be made, more or less, permanent.

The project promises necessary protection for the San Joaquin River, as well, since the two rivers have a common delta, and overflow of the

Sacramento may cause inundation on the San Joaquin up to Stockton. The project is necessary for safety of the lower lands on the floor of the two valleys, including the cities of Sacramento and Stockton.

Upon the project depends any inland waterway system for California, since the two rivers must form the arteries of any such system. The development of the valleys of the Sacramento and San Joaquin, and, to a certain extent, that of the commerce of the State, are dependent upon inland waterways, with consequent low freight rate to the ocean port, and access thereby to the markets of the world.

In the Sacramento Valley and the adjoining portion of the San Joaquin Valley are 1,291,027 acres of rich alluvial lands below the flood plane, whose future protection depends upon the completion of the project. Of this acreage, 595,731 acres are low river lands, reclaimed or in process of reclamation; and 149,600 acres include higher lands, partly protected, over which floods would pass in absence of protection, but on which they would not remain. The annual crop from these 745,331 acres is valued at $30,000,000.00. Of low lands entirely unreclaimed which must remain permanently waste unless the flood control project is completed, there are 160,600 acres. For taxable purposes, the value of these lands would be increased twentyfold by the project, and they would yield ultimately annual crops worth $5,000,000.00. There are 182,785 acres of the higher lands over which floods pass but on which they do not remain, which are entirely unprotected and for whose protection the flood control project is more or less necessary. There are 202,311 acres of waste lands in by-passes and overflow channels, rich in character, but now practically useless for revenue, the greater portion of which will become available for valuable crops on completion of the system of by-passes and weirs. These lands would add greatly, in crop and taxable wealth to the state's resources. It is quite evident, therefore, that the early completion of the Sacramento River flood control project means an enormous increase to the resources of the State, in additions to the taxable lands of most productive capacity, in increased annual crops and in insurance against injury to towns and to possible normal crops on lands now enjoying some measure of reclamation.

The Sacramento River flood control plan contemplates a unique co-operation between state and nation, under which the entire expense will be shared, about one-seventh by the nation, one-seventh by the state, and five-sevenths by the landowners whose lands will be benefited through ability to secure permanent reclamation.

The details of the plan itself and the division of the work have been fully explained in previous reports of this board for the years 1912 and 1914, and in various reports of federal government officials, to which reference is hereby made as follows: Report of Chief of Engineers, 1910,

H. D. No. 81, 62d Congress, 1st Session; Report of the same, 1913, H. (R. & H. Com.) D. No. 5, 63d Congress, 1st Session; annual reports of the California Debris Commission, 1907 to date; hearings before the Rivers and Harbors Committee at Washington, February 7, 1912, and December 8, 1913, and in California on July 24, 1915; hearing before the Senate Committee on Commerce, February 8, 1912. In addition, the Reclamation Board has at various times issued leaflets concerning different phases of the subject.

The portion of the report of the board which follows is devoted to an exposition of the progress made in the Sacramento project, and of the existing conditions. The two maps which accompany the report will make clear the physical progress explained in the text. Beyond this and for the information of those who are not familiar with the project and have not access to the records referred to, it will be sufficient to state the following facts: The problem of flood control of the Sacramento River involves caring for a maximum flood flow six times as great as the extreme capacity of the river below Sacramento City; and the by-pass system has been declared by the engineers to be the only feasible solution. The plan contemplates retaining within the river channel all the waters that channel can safely carry, by maintaining, on or near the river banks, strong levees or dikes. The excess is to be discharged in flood season, at convenient points, over four weirs, into by-passes, within which it will be conveyed through the basins to a junction with the river, fifteen miles above its mouth. From that point the river is to be widened and deepened sufficiently to carry the full flood. (The by-passes referred to are simply strips of land within the low basins, the water being confined in its flow over them by levees on each side.)

Progress in Construction—Federal Units.

Notwithstanding the magnitude of the Sacramento project and various obstacles encountered—including lack of knowledge on the part of those who would be most benefited by its completion, opposition for various reasons in a number of quarters, and lack of congressional approval and appropriation—work on the project has materially progressed.

In connection with that portion of the work, assigned, under the plan, to the United States engineers, and to be paid for jointly by state and nation, there has been progress, notwithstanding the fact that, in the absence of approval of the project by congress, there could not be congressional appropriation directly for such purpose. The project has been recommended by the Board of Engineers and the War Department; by the Rivers and Harbors Committee of the House of Representatives, and the Commerce Committee of the Senate in their reports of 1914; was passed by the lower house of congress, in the same year, but failed of passage in the senate through filibuster. Since that time there has not been approval of new projects and no direct appropriation for old projects, but simply an appropriation each session of a lump sum placed to the credit of the Chief of Engineers, to be allotted in his discretion for the continuance of existing projects.

It has been possible to continue the operations in opening the mouth of the river under these conditions, because, in 1910, congress approved a project recommended in the report of Chief of Engineers, 1907, for the purpose of taking care of the debris in the channel of the Sacramento River, which project contemplated the use of two suction dredges for fifty-six months. The work contemplated and being done by the California Debris Commission under this project (locally referred to as the minor project), may be considered as a part of the work included within the Sacramento River flood control project (referred to locally as the major project). For this minor project congress appropriated in 1910, $400,000.00, which was supplemented by a similar appropriation from California. In 1913 the legislature appropriated $200,000.00 for this purpose, which was met by allotment from the Chief of Engineers in 1914 and 1915, of $60,000.00 and $140,000.00, respectively, under recommendation of the California Debris Commission. The legislature of 1915 made a further appropriation of $250,000.00, which will doubtless be met by allotment of such amount as may be deemed necessary by the Chief of Engineers, under recommendation of the Debris Commission, for continuance of the present operations. Further appropriation will be necessary from the legislature in 1917, even for the minor project. If the major project should be approved by congress, at the next session, the legislature of 1917 should appropriate not less than $1,000,000.00 in accordance with recommendations already made, and to insure completion of the project within a reasonable time.

Under this minor project the California Debris Commission has, in effect, removed the principal obstructions to flow for high water conditions over a nearly straight channel about 3,000 feet wide, diverging from the river across the Horseshoe Bend, between Rio Vista and Bakers Point, on Sherman Island. In the course of this work some of the material has been so disposed of as to serve as the core of a levee about a mile in length across the base of Bakers Point, and the old levee outside thereof has been breached in several points to permit it to be attacked and eroded by flood waters, should flood conditions develop, to further facilitate the flow. This would tend to afford the necessary relief. Similar work was done at the corresponding projection formed by the lower extremity of Sherman Island. Corresponding work toward the same end has also been done at other places between Bakers Point and Collinsville, where it would afford the most relief.

In progress of this work the Debris Commission has moved with the two dredges 13,000,000 yards of material up to January 1, 1916, and has worked 26 months of the 56 months contemplated by the project.

The plan of operation and results accomplished are shown in a map accompanying this report, the data for which was furnished through the courtesy of the California Debris Commission.

The beneficial effects of the work already done in this way towards ''uncorking'' the river's mouth—one of the objects contemplated by the major project—are noticeable in improved run-off of the floods.

The progress of the work at the mouth of the river offers an indication of the manner in which the national and state authorities are co-operating so as to secure the most effective results.

Through delays in procuring certain property needed for spoil bank, to afford the best sequence of operations toward the flood control idea, it had been necessary for the federal engineers to anticipate their needs in this matter at other points, where they had constructed retaining embankments to hold the spoil from returning to the river. Operating under the minor project only, they could not construe the law to permit them to abandon this work for the time being, which had cost several thousand dollars, and repeat the expense to procure a similar new spoil bank at the Horseshoe Bend, after the lands there necessary had become available. It was desirable that the work at the Horseshoe Bend which would afford the most relief to the flood situation (under the major project), should be done at the earliest possible moment. On recommendation of the Reclamation Board, the State Engineering Department appropriated from its river funds on hand $12,868.96 for the purpose of building the necessary retaining levee four miles along the west side of the channel mentioned. The government dredges, following the construction of this levee, were enabled to deposit the material on the spoil bank behind such levee so that, without extra expense to the minor project, the work thereof was made available to the major project in opening the large channel necessary for the run-off of floods.

Similarly the California Debris Commission found itself prevented, by the limitations of the minor project, from surfacing the levee constructed across Bakers Point, and in the absence of such surfacing with soil there was question as to the advisability of permitting the sand embankment to be exposed to the wave wash that might result with the destruction of the outer levee, to enlarge the channel. The Reclamation Board arranged with the trustees of District No. 341 (Sherman Island), to advance $3,028.13, half of the necessary funds for this soil surface, and issued to them warrants of the Sacramento and San Joaquin Drainage District, to be paid out of Sacramento River Outlet Assessment No. 2, while the State Engineering Department provided a similar amount. That soil surface having been placed and the levee thereby protected to the satisfaction of the landowners in the district, the outer levee will be cut so that the high waters may escape across the point and cause further erosion to increase the area available for flood relief flow.

The State Engineering Department has provided during 1915, and the latter part of 1914, $53,021.03, to assist in various ways the work of the Debris Commission in opening the river's mouth. Of that amount $37,123.94 was paid in condemnation proceedings and purchase of rights of way, and $15,897.09 for dredging operations.

In the matter of weir construction, which is also a portion of the work contemplated in the major project and to be placed under federal supervision; while no construction has been done, in the absence of congressional appropriations therefor, rights of way for three of such weirs have already been secured—that for the Tisdale Weir, having been in the possession of the state for some years; that for the Fremont Weir, having been acquired through the operations of the Reclamation Board, and that for the Sacramento By-pass, having been purchased by the city of Sacramento, which has also undertaken to construct the Sacramento Weir itself, as herein elsewhere explained.

The Progress in By-pass and Levee Construction.

Notwithstanding the difficulties and obstacles referred to in this report, the progress in construction of units of the project, under supervision of the Reclamation Board, has been marked. Much of this progress has been due to the work of private capital, which has been undertaken under practical invitation of the state and assurances that the old plan of independent reclamation, involving danger to each district and ultimate destruction to all, has been replaced by a comprehensive plan looking toward safety to all, and providing a competent authority with power to enforce completion of the plan.

Of the 519.42 miles of river levees contemplated by the project, there have been already constructed and up to approved grade, as fixed by the Reclamation Board, 79.59 miles; constructed but not up to standard, 286.35 miles; in course of construction, 18.65 miles; projected, 5.89 miles; unprovided for, 55.68 miles; data lacking, 73.26 miles.

Of the 193.71 miles of by-pass levee there have been constructed and up to approved grade 9.47 miles; constructed but not up to standard, 20.39 miles; in course of construction, 40.10 miles; projected, 25.38 miles; unprovided for, 74.37 miles; not yet located (Butte Basin), 24.00 miles. In addition there may be counted as by-pass levee, 7.3 miles of the west levee of District 1001, which is in effect the east levee of the lower portion of the Sutter By-pass.

The following tables show the levee construction in detail, and reference to the map accompanying the report will more fully explain:

MILEAGE OF LEVEES OF THE SACRAMENTO VALLEY FLOOD CONTROL SYSTEM.

River Levees.

Section	1 Completed to approved grade	2 Not up to standard	2a Investigation not complete	3 In course of construction	4 Projected	5 Unprovided for
Sacramento River.						
Left bank:						
Chico Creek to Glenn County line	--------	--------	--------	--------	--------	16.95
Glenn County line to Butte Slough	--------	32.48	--------	--------	--------	--------
District No. 70	--------	15.53	--------	--------	--------	--------
District No. 1660	--------	2.96	--------	--------	--------	--------
District No. 1500	--------	25.16	--------	10.15	--------	--------
District No. 1001	--------	.95	--------	--------	--------	--------
District No. 1000	6.15	11.45	--------	--------	--------	--------
District No. 1	--------	.43	--------	--------	--------	--------
Sacramento City	3.66	--------	--------	--------	--------	--------
District No. 535	--------	3.40	--------	--------	--------	--------
District No. 673	--------	5.56	--------	--------	--------	--------
District No. 824 to District No. 813, inclusive	--------	10.50	--------	--------	--------	--------
District No. 755 and District No. 551	8.67	--------	--------	--------	--------	--------
District No. 369 to Brannan Island, inclusive	--------	13.90	--------	--------	--------	--------
Right bank:						
St. Johns to 2.7 miles north of Jacinto	--------	--------	--------	--------	--------	7.12
2.7 miles north of Jacinto to Colusa	--------	32.91	--------	--------	--------	--------
Colusa to Knights Landing	--------	49.80	--------	--------	--------	--------
Knights Landing to Fremont Weir	--------	5.17	--------	--------	--------	.60
District No. 1600	1.00	3.72	--------	--------	5.89	--------
Districts No. 827, No. 785 and No. 537	8.02	--------	--------	--------	--------	--------
District No. 811 and Broderick	--------	3.22	--------	--------	--------	--------
District No. 900	8.13	--------	--------	--------	--------	--------
Districts No. 765 and No. 307	--------	8.20	--------	--------	--------	--------
District No. 999	--------	1.24	--------	--------	--------	--------
Merritt Island	--------	7.76	--------	--------	--------	--------
Sutter Island	--------	1.56	--------	--------	--------	--------
Grand Island	17.32	--------	--------	--------	--------	--------
Steamboat Slough.						
Sutter Island	--------	--------	--------	--------	--------	4.16
Ryer Island	--------	6.67	--------	--------	--------	--------
Grand Island	11.00	--------	--------	--------	--------	--------
Cache Slough to Collinsville.						
North side	--------	--------	--------	8.50	--------	1.95
South side	2.15	3.82	--------	--------	--------	7.10
Feather River.						
Right bank:						
Hamilton Bend to north line Drainage District No. 1	--------	--------	--------	--------	--------	7.77
Drainage District No. 1, north line to Yuba City	--------	--------	18.26	--------	--------	--------
Yuba City to Nelson Bend	--------	19.41	--------	--------	--------	--------
Left bank:						
District No. 10	--------	--------	14.95	--------	--------	--------
City of Marysville	1.84	--------	--------	--------	--------	--------
District No. 784	--------	4.37	--------	--------	--------	9.28
District No. 1001	--------	*12.12	--------	--------	--------	--------
Yuba River.						
South levee	--------	--------	7.43	--------	--------	--------
North levee	9.01	--------	--------	--------	--------	--------
Bear River.						
All levees	--------	--------	26.62	--------	--------	--------
American River.						
North levee:						
District No. 1400	2.64	--------	--------	--------	--------	--------
Western Pacific Railroad to high land	--------	--------	6.00	--------	--------	--------
South levee:						
District No. 1	--------	2.21	--------	--------	--------	--------
District No. 1 to Meister District	--------	--------	--------	--------	--------	.75
Meister District	--------	1.85	--------	--------	--------	--------
River totals	79.59	286.35	73.26	18.65	5.89	55.68

Total river levee, 519.42 miles.

*Includes 7.3 miles of levee from Nelson Bend to mouth of Feather River, which might be considered as Sutter By-pass levee.

MILEAGE OF LEVEES OF THE SACRAMENTO VALLEY FLOOD CONTROL SYSTEM—Continued.

By-pass Levees.

Section	1 Completed to approved grade	2 Not up to standard	2a Investigation not complete	3 In course of construction	4 Projected	5 Unprovided for	5a Butte By-pass
Yolo By-pass.							
West levee						42.40	
District No. 1600					6.25		
District No. 827		2.92					
District No. 785		3.41					
District No. 785 to District No. 900						1.45	
District No. 900		4.67					
District No. 999					15.46		
Ryer Island	9.47						
Sutter By-pass.							
West levee:							
District No. 70		.77					
District No. 1660						9.41	
District No. 1500				19.55			
East levee:							
Northern Electric Railway to District No. 1 levee						12.66	
Through Levee District No. 1				3.14			
Levee District No. 1 to Southern Pacific Railroad						4.10	
Southern Pacific Railroad grade		1.67					
Butte By-pass.							
All levees							24.00
Butte Slough By-pass.							
All levees		6.95					
Tisdale By-pass.							
North levee						4.35	
District No. 1500				4.86			
Sacramento By-pass.							
All levees					3.67		
Knights Landing Ridge Cut.							
Both sides				12.55			
By-pass totals	9.47	20.39		40.10	25.38	74.37	24.00

Total by-pass levees, 193.71 miles.

Butte Basin. In the Butte Basin the location of the weir and by-pass has not been finally determined by the engineers and the board. Tentative plans appearing in the report of the Chief of Engineers, 1910, are subject to modification to be made by this board on recommendation of the engineers, federal and state; and while such plans as to all other parts of the project have received the necessary modification and have been finally approved, there has been no action taken in the Butte Basin. This was because there was not the immediate necessity therefor, while there was necessity for immediate determination and action as to other portions of the project; the local interests in the Butte Basin seemed to be generally content with existing conditions; no danger was involved to other portions of the project, and there is a possibility that an early completion of the Iron Canyon reservoir may obviate the necessity for by-passes in this particular basin.

Colusa Basin. The Colusa Basin has been subject to disastrous floods due to the hill waters from the west and the absence of adequate provision for handling the same, and the imperfect river levees between Colusa and Knights Landing, particularly in those portions not included within organized districts. These difficulties are being very rapidly remedied.

The Knights Landing Ridge Cut, a unit of the Sacramento River flood control project, intended to convey the hill waters of the Colusa Basin through the Knights Landing Ridge and into the Yolo By-pass, is now nearing completion and in operation, and giving already the necessary relief. The completion of this cut by the Knights Landing Ridge Drainage District was fought through injunction by some districts and private owners, and its completion delayed until the litigating districts and owners were, in the winter of 1914–1915, inundated; a disaster which would have been avoided had they co-operated earlier in completion of the project. This case furnishes a striking instance of the results which may be expected to follow lack of co-operation on the part of interested property owners and districts in securing completion of units of the project.

For a number of years past District 108 has endeavored to maintain, for its own protection, the entire stretch of river levee on the west side of the Sacramento River from Meridian down to Knights Landing, a large portion of which was entirely without its own boundaries and a protection to the lands of others. In the winter of 1914–1915, this levee broke at several points near Meridian, because, while District 108 was willing to pay the expense and to undertake the work of strengthening such levees, the owners thereof refused to permit the necessary work in connection therewith. In consequence, by special act of the legislature of 1915, there was created the West Side Levee District, including all the lands to be benefited, and with power to construct and maintain 50 miles of levee on the west side of the Sacramento River from Colusa down to Knights Landing. That district has had dredges working for a year past, to so strengthen the levee that it might afford protection against the floods of this season (1915–1916). It is intended to complete the work during the present year.

Yolo Basin. In the Yolo Basin there has been, since the date of the last report, practically no progress in construction of the unfinished portions of the eastern levee of the Yolo By-pass. These unfinished portions consist of 15.46 miles at the lower end (being the west levee of the Netherlands District No. 999), and 6.25 miles at the north (being the west levee of Mull District No. 1600). District 999 has been delayed partly by condemnation suits for rights of way. District 1600 has already arranged to push construction work during 1916. There has been no construction of any portion of the west levee of this by-pass. The river levees in this basin are unfinished on the frontage of District 1600, and are defective at points in two districts. Otherwise they are generally in good condition.

Sutter Basin. District 1500 reports construction of 24½ miles of the 34½ miles on her Sacramento River frontage. Construction of the balance is delayed by complications as to rights of way. The north and east levees of the district, forming, respectively, the south levee of the Tisdale By-pass and the southerly twenty miles of the west levee of the Sutter By-pass, are reported as 50 per cent finished, but are now stopped by injunction as is elsewhere explained.

District 1500 has also recently commenced work on three miles of the east levee of the Sutter By-pass, within the limits of Levee District No. 1. This work is necessary for the protection of Levee District No. 1, and is required by the act creating District No. 1500.

American Basin. Work in the American Basin has been finished and the entire basin closed to flood waters by the completion, a year ago, of the levees of Districts 1000 and 1001, owned or controlled by the Natomas Consolidated. The first named district comprises 52,128 acres and the second 31,203 acres.

The levees of these districts along the Sacramento River for eighteen miles, furnish fine examples of modern levee construction. They are placed 100 feet or more back from the river bank, the intervening space being grown up with brush and timber to guard against wave wash. The levees have a crown of 24 feet, average height of 15 feet and slope outside of three to one and inside of two to one.

In construction a drag line excavator was used to excavate a central trench 10 feet below the natural surface and 12 to 15 feet wide at bottom, and 30 to 35 feet at top, the material being thrown up on each side in the shape of a levee. This trench and the core between the clay levees was then filled in with sand pumped by suction dredge from the river bottom. This sand core levee is a valuable safeguard against burrowing by gophers, one of the obstacles to maintenance of strong levees in the Sacramento Valley, and also diminishes seepage by offering a barrier to the flow through pervious strata. The expense per cubic yard is said to be no greater than that experienced in clamshell work. The cross section calls for more material than would a clamshell levee, because of the dragline trench, but this is partly offset by the slippage of the clamshell material.

In District 1000 last year, for the first time in fifty years, the sea of flood waters was replaced by a sea of waving grain.

Sacramento By-pass.

The Sacramento By-pass, 1.83 miles long, situated a few miles above Sacramento City, and intended to discharge excess floods into the Yolo By-pass, is necessary for the safety of Sacramento City and of the neighboring districts, on both sides of the river, above and below her. It is intended as an easement for the American River, which river in extreme flood will carry, it is estimated, 180,000 second-feet, augmenting the flood which the Sacramento River channel below the mouth of the Feather can accommodate (now 75,000 second-feet, but to be increased on completion of the river levees of District 1600 to 107,000 second-feet). The maximum capacity of the river channel below Sacramento City is but 110,000 second-feet, and no levees practicable in the neighborhood of Sacramento City could, under present conditions, long remain above the rising flood plane which would follow the choke produced by the flow of 287,000 second-feet indicated.

Because of her critical position and the uncertainty of congressional appropriation for weir purpose, Sacramento City voted, in 1912, over $500,000.00, to be used in opening the Sacramento By-pass. There were delays because of rights of way negotiations, and changes in city administration, but the entire rights of way have now been purchased by the city and she has perfected plans for the weir which have received approval of the Chief of Engineers and War Department. The weir structure is designed to carry also a public roadway for Yolo County and the trackway of the Sacramento and Woodland Railway. Its sill is fixed at elevation 25.0 U. S. E. D. datum, and above that, in 40-foot sections, are 48 movable gates which permit retaining the flood in the river channel up to elevation 31.0 U. S. E. D. datum, or discharging it through one or more of these gates. The gates are so devised that automatically a steadily increasing number will drop for each half-foot rise in flood plane above elevation 32.0 U. S. E. D. datum, all being open when the flood plane reaches 36.5 U. S. E. D. datum.

The Reclamation Board will build the lateral retaining levees of the by-pass and adjust the matter of compensation for drainage plants, etc., with Reclamation Districts Nos. 785 and 537, through both of which the by-pass cuts.

Some fears were expressed by Yolo County landowners as to possible increased damage to their lands from the operation of the Sacramento By-pass in conjunction with the Yolo By-pass, but there is apparently no good ground therefor, as indicated by reports made in connection with the subject in September, 1912, by Major S. A. Cheney, U. S. A., then executive officer of the California Debris Commission, and Hon. W. F. McClure, state engineer, to be found in the report of the Reclamation Board published in 1912.

According to the statements of these engineers, with the various levees as they are now, and holding intact, no water could go over the Sacramento Weir as planned until the Yolo Basin had been filled through existing breaks at Grays Bend and Woods Bend and at Elkhorn Weir; water would have to be pouring more than four feet deep over Elkhorn Weir before it would begin to go over the Sacramento Weir; the extra amount which could go into the Yolo Basin, because of the Sacramento Weir, would be under such circumstances, small; the operation of the Fremont Weir, with the corresponding construction of river levees, which will follow construction of the Sacramento By-pass, would be of great value to Yolo Basin, diminishing the amount of water going into the basin by forcing the river channel to carry more, and maintaining conditions under which in any year there would be water in the basin for less time than under existing conditions, and in some seasons none at all; and the speedy construction of the Sacramento Weir should be therefore promoted by all who are interested in the development of Yolo Basin.

Basin Reclamation and Board Policy.

While the intent of the Reclamation Board Act is obviously that the Reclamation Board should promote in every practicable way the early completion of the Sacramento River flood control project, the board has not taken the initiative in advancing reclamation in the river basins even when such reclamation would incidentally construct works which are integral parts of units of the project.

It has followed this policy for two reasons: First, there was obviously a possibility that reclamation in the upper basins, if it progressed too rapidly, would so diminish the basin reservoir capacity in flood season as to cause increased danger to the river and to existing reclamations, until the work of opening the mouth of the river had progressed far enough to permit the rapid run-off of augmented flood; second, the board deemed it best to have reclamation work of this character, incidental to the project, done so far as possible, by the districts and landowners themselves, under approval and supervision of the board and its engineers. Such a plan is obviously more satisfactory to the districts, while it utilizes their organization and facilities, relieves the board of much detail, and permits it time and attention for supervision of this work and for consideration of the larger features of the problem. For the reasons indicated, the board has thus far avoided, save in case of necessity, taking, itself, the initiative in actual construction of by-pass works. If, when the river's mouth has been sufficiently opened, the work in the basins has not kept pace therewith, through private and district initiative, the board can, under its authority, force completion of basin and river work, wherever necessary to secure flood control.

It is evidently not the intent of the act, however, notwithstanding the consideration above mentioned, that the board should disapprove plans of reclamation districts for reclamation in the upper basins if the plans are in conformity with the flood control project, and particularly where levees necessary to units thereof are part of such plans. The act plainly invites co-operation from the districts in such work. The board has assumed that each reclamation district or owner of overflow lands has the right, under the law and in conformity with the act, to reclaim its lands, provided the plans therefor should be approved by the state and federal engineers as in conformity with the Sacramento River flood control project, adopted by the state. It has, therefore, approved plans of this character when presented to it by reclamation districts or owners, even in advance of the necessary opening of the mouth of the river, but has endeavored to provide for safety of all interests by restricting the closing of the reclamation levees in the upper basins until a time so remote that there would be opportunity to secure the necessary relief in run-off below. For instance, a delay of two years each was enjoined on District No. 1500, in Sutter County, on the Knights Landing Ridge District for making the Knights Landing Ridge Cut, on the Mull District No. 1600 and the Netherlands District No. 999, in Yolo County, on the assumption that within that time, under the appropriations made and provided for, sufficient increased capacity would be secured in the river's mouth to compensate for withdrawal of basin reservoir capacity, and that, in the meanwhile, Sacramento City and interests concerned would complete the construction of the Sacramento By-pass for which measures had already been inaugurated.

Under a recent decision of Judge Emmet Seawell, presiding in the Superior Court of Sutter County, in the case of *Samuel Gray et al.* vs. *Reclamation District No. 1500,* if upheld by the Supreme Court, it would appear that reclamation in the basins can not proceed by individual district work which raises the flood plane, even though it constructs necessary parts of units of the flood control project, unless there be completed, at the same time, the entire work in by-pass and levee construction for the particular unit of the project involved. For only in this way can all lands threatened be protected from the effects of such raise in flood plane. It may become necessary, now, in fairness to districts which have, under the state's invitation, expended large sums of money in this work and which may not complete it for their own protection under the Seawell decision (and it will certainly be necessary in the future, when the time is opportune for completing all by-passes), that the Reclamation Board abandon the policy above indicated, and itself assume the initiative in constructing, at one time, all remaining portions of large units of the project. In such case the problem of financing such construction, in the absence of power in the Sacramento and San Joaquin Drainage District to issue bonds, becomes a very grave one and may offer serious obstacles to completion of certain units of the project.

Assessments.

The board has levied five assessments as follows:

General Assessment No. 1, $250,000.00, levied June 9, 1914; assessors, A. E. Chandler, Max W. Enderlein, and Alex Brown. First installment called, $150,000.00, delinquent July 15, 1915; amount collected to December 31, 1915, $111,523.36, a small portion of which is payment in advance on the second installment which has not yet been called.

In levying this assessment the board complied with the specific provision of the act of 1913, providing that out of the first assessment levied by the board there must be returned to the state treasury $50,000.00, or one-half of the appropriation made by that act for the running expenses of the board. The assessment was necessitated further by the facts that the legislature, in passing the act of 1913, clearly intended that future administrative expenses of the board should be paid out of assessments; that the legislature of 1915, in amending the act, made no change in such policy; and that the funds in the board's hands were about to be exhausted, while the work, vital to the project, had to continue. We believe this method of assessment for providing funds for the administrative work of the board to be a serious mistake, to which attention is hereafter called.

Of the amount collected through this assessment, $50,000.00 was paid into the state treasury, in accordance with the terms of the act of 1913, and afterwards placed to the credit of a revolving fund for certain uses of the Reclamation Board, as provided in the act of 1915. The balance, $61,523.36, remained to meet the various expenses of the board.

Sacramento River Outlet Assessment No. 2, levied August 4, 1914, $367,000.00; assessors, A. E. Chandler, Max W. Enderlein, and Alex Brown.

In levying this assessment the board complied with the direction of the act of 1913 which provided that one of the first projects to be given consideration by this board shall be the Sacramento River Outlet project, and that it shall provide in the assessment therefor for the return to the State of California, municipalities, reclamation districts and landowners of amounts expended by them, previous to passage of the act in purchase of rights of way in connection with such outlet project.

The amounts thus subscribed for rights of way, as referred to in the act, aggregate $240,188.19, of which $75,000.00 was furnished by a bond issue by the city of Sacramento, and most of the balance obtained through efforts of the San Joaquin and Sacramento River Improvement Association. In addition Assessment No. 2 covers estimated cost of additional rights of way under condemnation suits (since decided), spoil banks, elimination of Wood Island, levee work not covered by contemplated congressional and state appropriation, assessment expenses, etc.

A warrant has been issued against this assessment for $3,028.13, in favor of the trustees of District No. 341 (Sherman Island), who advanced half of the amount necessary for surfacing the new Bakers Point Levee prior to cutting off such point. The other half was furnished by the State Engineering Department from its appropriation for river work.

Sacramento By-pass Assessment No. 3, levied August 4, 1914, $900,000.00; assessors, A. E. Chandler, Max W. Enderlein, and Alex Brown (subsequently canceled and relevied as indicated below).

This assessment was levied in order to hasten, in co-operation with the city of Sacramento, the completion of the Sacramento By-pass, which by-pass is recognized as necessary to secure the safety of Sacramento City and the surrounding districts, more particularly from the menace offered by the floods of the American River, and is preliminary to installation of the Fremont Weir. Sacramento City, in the absence of congressional appropriation for weir construction, had offered to construct the Sacramento Weir with funds secured from a bond issue passed by the city on behalf of the completion of the Sacramento By-pass. She has already purchased the necessary rights of way for the entire by-pass, amounting to $275,000.00.

Assessment No. 3 is intended to reimburse Sacramento City for the purchase of these rights of way and also to cover the cost of construction of the two lateral levees and such additions to the weir structure as are intended for the purposes of the Yolo County road and the trackway of the Sacramento and Woodland Electric Railway, now having rights of way across the by-pass, and also to compensate Reclamation Districts Nos. 537 and 785, which are cut by such by-pass, for damage incurred thereby.

This assessment was canceled January 29, 1916, and a new assessment for $1,095,000.00 levied covering the changes necessitated by the plans for the weir, submitted by Sacramento City and approved by the Chief of Engineers. The assessors named for this assessment are Max W. Enderlein, F. C. Herrmann, and B. A. Etcheverry.

It is contemplated that collection will be made on this assessment this fall.

Fremont Weir Site Assessment No. 4, levied August 25, 1914, $180,000.00; assessors, Max W. Enderlein, F. C. Herrmann, and B. A. Etcheverry.

This assessment was levied in order to purchase the lands known as the Freitas and Caffaro lands, and some other lands, at the head of the Yolo By-pass, which are necessary to provide the site for the Fremont Weir and an opening 8,000 feet wide from the Sacramento River near the mouth of the Feather, into the Yolo By-pass. Options had been secured on the Freitas and Caffaro properties in 1913 and 1914, which options were expiring, necessitating an assessment for the purpose of securing the necessary funds. A warrant has already been issued for the payment of the amount due on the Freitas contract, $102,930.20, and the deed therefor placed in escrow pending the payment of the warrant. The assessors are now proceeding to the spreading of the assessment and it is expected that collection thereof will be made in the fall of 1916.

Freeport Levee Assessment No. 5, levied January 18, 1916, $58,163.70; assessors, Max W. Enderlein, F. C. Herrmann, and B. A. Etcheverry.

This assessment was levied for the purpose of securing the funds necessary to strengthen and revet a certain stretch of levee, 3,550 feet long, on the east side of the Sacramento River below Freeport, between Districts Nos. 824 and 744. A break in the levee at this place would not only inflict injury to the navigability of the river and damage to a number of districts in the neighborhood and below, but would also very seriously injure a territory extending into San Joaquin County. Temporary repairs, which it is hoped will be sufficient to protect the levee during the current floods, are being carried on by the State Engineering Department under funds to be provided as follows: $1,750.00 by the State Engineering Department; $1,000.00 by the supervisors of Sacramento County because of interest in public roads; an amount not exceeding $400.00 by private subscribers, to be reimbursed by warrants from the Sacramento and San Joaquin Drainage District, payable out of this assessment. Work on permanent construction and revetment will be commenced after the winter season. The assessors are engaged in the work of assessment, and collection, it is expected, will be made in the fall.

Storage and Flood Control—Sacramento Valley.

One fruitful cause of opposition to the flood control project, and of apathy on the part of those who otherwise would have co-operated in promoting its completion, is the declaration that the by-pass plan recommended by the federal engineers and adopted by the state is not the proper plan of flood control for the Sacramento River; that it carries in waste to the sea the flood waters which could be stored for power, irrigation and municipal purposes; and that there is ample reservoir capacity in the Sierra Nevada Mountains to store all these flood waters. This declaration has been for years insistently made by those ignorant of the facts and by those who ignored them, and has been used as a stock argument for the abandonment of the present plan, and the promotion instead of the Newlands-Broussard bill which has been for many years before congress without action.

Some support has been given to this belief by the fact that there is in the Sierra storage capacity which if available for the purpose would go far towards controlling the floods of the Sacramento River.

The report of the Chief of Engineers, 1910, declares that storage reservoirs can not be utilized for flood control of the Sacramento, because (1) the storage available would care for only a small portion of the flood and (2) the expense as to available storage would be from two to ten times as great as that involved in caring for the same amount of flood by the by-pass system.

Because of the large apparent storage capacity in the mountains and the failure of the report of 1910 to explain the limitations created by the word ''available'' the federal engineers have been accused by some of misrepresentation or incompetency. The explanation of the apparent discrepancy lies in the fact that most of the storage of the Sierra is not available for control of the Sacramento River flood for one or more of the following reasons:

(*a*) It is above or can not be reached by the flood flow.

(*b*) It duplicates, in whole or in part, the service of other storage draining the same area.

(*c*) Its capacity is greatly in excess of any flow of the season which can drain into it.

(*d*) It is fed, not by flood waters in time of river flood, but by melted snow after the danger of river flood has passed.

(*e*) Its use would involve the sacrifice of homes and agricultural lands of such value as to make it impracticable.

A few instances will illustrate the conditions. Big Meadows Reservoir, draining a small section of one fork of the Feather River, with a credited capacity of over 500,000 acre-feet, is practically negligible as a factor for control of the Sacramento River. It receives its supply largely from melting snow late in the season, and its capacity is from two to three times as great as the season's run-off, which can drain into it.

Again, on the upper Pit River are four reservoir sites—Big Valley, Jess Valley, Warm Spring and Round Valley, with an aggregate surveyed capacity of 4,186,000 acre-feet. The aggregate total of the mean annual flow which could be received by each is 1,100,000 acre-feet. Of the 770,000 acre-feet flow accessible to the largest reservoir, 340,000 can be stored also in the three smaller reservoirs. These facts developed under a joint survey made by the United States Reclamation Service and the State Engineering Department, because of the protests of landowners at having their lands and homes in these reservoir sites, included in federal reserves. As a result the government retained in reserve the three smaller reservoirs to the extent only of their available capacity, 340,000 acre-feet (their actual surveyed capacity is 990,000 acre-feet), and abandoned entirely the Big Valley, which, with a capacity of 3,196,000 acre-feet, could have received and stored of the flow, in excess of that stored by the smaller reservoirs, not more than 430,000 acre-feet. So in this case, the United States Reclamation Service, which is particularly concerned in reserving all available storage capacity, found that an apparent capacity of 4,186,000 acre-feet dwindled down in practice to 340,000 acre-feet.

E. G. Hopson, formerly supervising engineer of the United States Reclamation Service on the Pacific Coast, and now consulting engineer in the same department, thus expressed himself on this subject before the California State Water Problems Conference at its session on October 27, 1915:

> ''As to the possibility of reservoirs holding back the floods of the Sacramento Valley, there have been some very definite statements. We have collected a mass of information. All the reservoir sites are known to us and have been surveyed. It is impossible to hold back the greater part of the Sacramento floods by use of reservoirs. There are only two effective reservoir sites that I know of—that at Iron Canyon and one on the Pit River—and these could care for only the peak of the floods. Reservoirs never could hold back the great mass of flood water, and on that we can not lay too much emphasis. I think there is more fallacy abroad on that point than on any other point having to do with water problems. We could use all the sites available for the storage of flood waters, and they would affect only to an insignificant extent the flood problems.''

Opposition to and criticism of the project based on this misconception of the availability of storage reservoirs is fast disappearing, as the facts become known and understood.

The Iron Canyon reservoir as projected by one of the plans of the United States Reclamation Service is one of the few storage reservoirs which could be made of value to the Sacramento River flood control project. Concerning the measures of that value there is practical agreement between this board and the Reclamation Service as is evidenced by correspondence attached to the Reclamation Service report on the Iron Canyon Project, published in 1915. The early completion of that project with satisfactory operation in the interest of flood control, would justify material modification, and possibly entire elimination of the by-pass system so far as it applies to the Butte Basin, but would not justify changes elsewhere.

It should be said, however, that in the report mentioned the Reclamation Service presents ten alternative plans, a number of which do not offer any measure of flood control; and that the particular plan recommended by the Board of Review—appointed by Secretary of Interior Lane, 'B-3,' is not a storage plan, does not provide for flood control and would interfere with navigation. To add to this plan the elements necessary to limit maximum flood flow to 100,000 second-feet (the flow recorded February 3, 1909, is 276,000 second-feet), would cost, as indicated by the report, $3,600,000.00 additional, while the estimate for cost of river navigation improvement below Red Bluff, because of reduced flow induced by adoption of this plan, is $4,000,000.00.

It is true that reservoirs hereafter constructed may prove additional factors of safety to the Sacramento flood control project, but only to the extent of the flood which they will hold back at flood stage, and that project has been so planned that they can fit into it when built.

Obstacles and Litigation.

In connection with matters which have had more or less effect upon progress of the project may be mentioned the following:

Sutter Basin Controversy. In the Sutter Basin, District No. 1500, in accordance with the flood control project, planned, and under direct authorization of the legislative act of 1913, had commenced the work of enclosing the 63,735 acres included in this district within levees. Two of these levees—that on the north and that on the east boundary of the district—form, respectively, the south levee of the Tisdale By-pass, and twenty miles of the west levee of the Sutter By-pass, both integral parts of the Sutter Basin unit of the flood control project. In lands, machinery, interest and operations, the owners of this district have already invested over two million dollars, and it was planned that their works would be completed during the year 1915, permission having been granted by the Reclamation Board to close the levees not earlier than March, 1915. Two suits, however, were brought against the district, one by the supervisors of Sutter County, alleging threatened injury to county roads and buildings; and the second by private landowners, based on possible injury to private property. Under the first suit an injunction was granted by the Superior Court of Sutter County and the work of the district has been delayed, while its partially constructed levees have been subjected to wash.

These suits, too, it is stated, have been the occasion of delaying the construction by District 1660 (created by legislative act of 1915), of the northern portion of the west levee of the Sutter By-pass and of the entire north levee of the Tisdale By-pass, which are identical with that district's protective levees on its east and south lines.

The complainants in these cases have alleged—and it is undoubtedly true—that the completion of the levee system of District 1500 will raise the flood plane, and, in the absence of the completion of the entire Sutter Basin By-pass, endanger lands east of such by-pass. The same conditions would exist no matter where the by-pass is located. The Reclamation Board endeavored, by exercise of its powers, to protect the lands to the east of the by-pass by providing for the construction of the east levee of such by-pass cotemporaneously with the construction of the levees of District 1500. This course was strongly opposed, however, by parties to the suits referred to, and others, because they objected to the location selected for the by-pass, and for other reasons.

In the suit brought by the supervisors against District 1500, a peremptory writ of prohibition has been issued by the Supreme Court preventing the Superior Court of Sutter County from further consideration of that case. The decision declares, in effect, that the construction of these levees by District 1500, in accordance with the act of 1913, is the ''execution of a public statute by officers of the law for a public benefit,'' and may not, therefore, be enjoined, under section 526 of the Code of Civil Procedure, and section 3423 of the Civil Code. It declares also that the property claimed to be liable to injury in this case is not private property of the county, but state property, and that, even if the facts are as alleged, the state has the right to order the injury or destruction of such property for a public benefit, without condemnation or compensation.

The suit of the private landowners against District No. 1500 has been decided by the Superior Court in favor of the landowners, and an injunction granted, which will hold unless the Supreme Court on appeal shall reverse the decision. The effect of this decision is referred to in this report under the head of ''District Work and Board Policy.''

Sacramento City Injunction Case. An injunction suit, against the city of Sacramento, to prevent construction of the Sacramento Weir and utilization of the Sacramento By-pass, because of alleged injury that would be inflicted thereby on certain lands in the Yolo By-pass, opposite the Sacramento By-pass, threatened to delay the completion of that very important unit of the project. The Reclamation Board has undertaken to secure, if possible, a satisfactory adjustment of the matter, and pending such adjustment, the case has been dropped from the trial calendar without prejudice.

The work of the Reclamation Board has been hampered and delayed by a number of obstacles, prominent among which are various suits brought by landowners against the board in the matter of assessment and right of way.

Yolo Basin Suits. On June 30, 1914, the Reclamation Board made public its intention to allow for easement over the land included in the Yolo By-pass a uniform price of $20.00 per acre, to be paid at the time collection might be made of an assessment for Yolo By-pass purposes. This offer contemplated retention by the owners of the fee title, and full use by them of the lands for any purposes which would not interfere with the by-pass operation. The offer was made, notwithstanding the disparity in value of respective parcels of land in the by-pass, on the theory that almost all, if not all, of the lands in such by-pass would be materially benefited by the completion of the by-pass, the valuable lands receiving most benefit, and that the amount named represented, in liberal degree, the maximum value to be received by the district from flood flow over these different parcels. The benefits to be received by the lands in the by-pass, through completion thereof, and construction of tidal levees in the lower reaches, include ability to get on such lands very much earlier and to remain on them much later (because flood waters could have access to the by-pass only over the weirs at the high flood stage), and because of the thorough drainage of such lands through the borrow pits.

No contracts were made on this basis for easement, and a number of property owners, to wit: Eliza A. Gallup and Effa M. G. Lord, J. H. and T. S. Glide, Lizzie H. Glide, W. W. Bassett, Sparrow Smith, and Finance and Construction Company, a corporation, owning in the aggregate about 16,000 acres within the by-pass, commenced separate suits, identical in character, against the Sacramento and San Joaquin Drainage District to compel the payment of $65.00 per acre for such lands, declaring that they were being used by the district and the board for by-pass purposes. The Superior Court of Yolo County denied motions of defendant in these cases for a change of venue to Sacramento County. On appeal to the Supreme Court, the ruling of the lower court on this point was reversed and the suits have been transferred to Sacramento County for trial. In the meanwhile, on October 5, 1915, the Reclamation Board suspended, and, on November 5, 1915, withdrew entirely the offer of $20.00 per acre for easement over all Yolo By-pass lands, following very thorough investigations by experts which satisfied it that, for some of the lands in question, $20.00 per acre would be an excessive price, even for fee.

Assessment Suits. The levy and collection of General Assessment No. 1, for return to the state treasury of $50,000.00 and for furnishing funds for the administrative expenses of the board, as called for by the act of 1913, have given rise to a number of suits against the Reclamation Board and the Sacramento and San Joaquin Drainage District brought in various counties, which suits attack not only the legality of the assessment itself, but the general power and jurisdiction of the board and the constitutionality of the act creating it.

In view of the gravity of the issues raised, the board has deferred pushing certain features of the project until its powers have been judicially determined. The issues are being brought to trial as rapidly as possible.

In one of these cases—that of *Miller & Lux* vs. *The Sacramento and San Joaquin Drainage District,* brought in the county of Merced, the board asked that the local judge be disqualified in accordance with the provisions of the act of 1915, amending section 170 of the Code of Civil Procedure, and declaring that the local judge in reclamation cases shall be automatically disqualified on the request of either party to the suit. That issue went up to the Supreme Court on a writ of prohibition, the motion having been disallowed by the judge of the lower court. On March 23, 1916, the Supreme Court rendered a decision in the case declaring the act of 1915 to be constitutional, and issued peremptory writ of prohibition to prevent the Superior Judge of Merced County from hearing the case. On appointment of a judge by the governor this case will be pushed to trial in order that the important points involved may be speedily determined.

Following is a list of the number of cases and the owners represented, brought in the respective counties, in opposition to the payment of Assessment No. 1:

County	Number suits	Number owner plaintiffs
Butte	3	6
Glenn	7	143
Colusa	67	105
Yuba	3	35
Sutter	1	1
Yolo	6	6
Sacramento	7	9
Solano	0	0
San Joaquin	1	19
Contra Costa	0	0
Stanislaus	0	0
Merced	6	6
Madera	1	1
Fresno	0	0

These suits have further embarrassed the board in its work because of the necessity for reserving sufficient of its funds on hand to properly defend the Reclamation Board Act against the issues raised, and the inability therefore to expend moneys along lines contemplated for the furtherance of the project.

Engineering Work Accomplished.

When the Reclamation Board Act of 1913 became effective, August 10, 1913, enlarging the board and appropriating $100,000.00, at least $20,000.00 of which was to be used in paying the expenses of the state engineer in carrying out the directions of the act, the flood control division of the State Department of Engineering had a force of eleven men in the field and three in the office, besides the flood control engineer; the field force being at work on general surveys and cross-sections of Butte Slough and Butte Basin, securing data for the perfection of the flood control plans, as directed by the act of 1911, creating the Reclamation Board, which act appropriated $10,000.00 for the purpose, and which amount had been supplemented by donations from reclamationists interested in the project in order to keep the work going until the 1913 appropriation became available.

Under the 1911 appropriation and donations, details of the Yolo and Sutter basins had been surveyed, and Flood Control Reports Nos. 1 to 13 made to the Reclamation Board upon details of the plan covering the American River overflow channel, the Yolo By-pass, the Sutter By-pass, and the Tisdale By-pass.

Under the 1913 appropriation the field work in Butte Basin was completed and a few cross-sections of the Feather River taken at Nelson Bend, where a considerable change had occurred in the river channel since the detailed maps of that river had been made by the United States Engineering Department. This practically completed the field work necessary to secure data for the perfection of the flood control plan, except for the hydrographic work of obtaining gage readings and measurements of flood flow which has been carried on each flood season, and for which $2,650.00 was supplied during the winter of 1914–1915 by the State Department of Engineering from the appropriation for river work.

The data obtained in the field has been worked up in the office, and by its use, in connection with the maps and data already available from the United States Engineering Department reports, further details have been worked out as to the estimated flood planes in by-passes and rivers, and the dimensions of levees necessary.

The locations of the Yolo, Sacramento, Sutter and Tisdale by-passes have been worked out, together with reports on the East Sutter Basin drainage system and on levee location on portions of the Sacramento River.

A tentative plan contemplating changes in the Butte Basin By-pass system has also been worked out and is ready for discussion with the United States engineers.

The dimensions required for the Feather River overflow channel between Marysville and Nicolaus have also been worked out and will be acted upon as soon as the engineers for an interested district have had an opportunity to present their plans for a modification thereof.

The 1913 act included the making of additional flood control plans for the San Joaquin and Sacramento rivers and their tributaries.

Surveys of the San Joaquin River were made by the United States Engineering Department under a joint fund of $64,557.00, one-half of which was supplied by the State Department of Engineering from its appropriation for river work. The maps of this survey have just been sufficiently completed to be made available in working out an estimate of the flood quantities to be expected at various points in the San Joaquin Valley, to be cared for by a comprehensive flood control plan, based upon the 1911 flood, which is the largest general flood of record in that valley.

Besides the work above mentioned in perfecting the flood control plans, a great deal of the time of the Engineering Department has been occupied in the following work:

Sutter Basin By-pass System. The Sutter and Tisdale by-passes have been located in the field, and ties to section corners made and elevations taken, from which plans were prepared for the notices served by the Reclamation Board upon the property owners to construct the levees of these by-passes, as provided in the 1913 act as a preliminary to construction thereof by the board.

Estimates of the cost of construction including a general plan for the East Sutter Basin Drainage System have been made.

Feather River and Upper Sacramento River. Location surveys for the levees have been made and elevation and cross-sections taken from which plans and estimates may be prepared for any necessary assessment to cover the cost of bringing these river levees up to any adopted grade.

Yolo By-pass. A survey locating the edge of tule was made to aid in determining acreages of different classes of land in the Yolo By-pass for the use of the board in connection with certain suits.

Investigations and plans were prepared for use of the board in making a contract for the clearing of a portion of the head of the Yolo By-pass.

Sacramento By-pass. Location surveys for the levees, including elevations and cross-sections and test borings, have been made, and plans and estimates prepared for the use of the board.

Freeport Levee Project. Necessary surveys, plans and estimates have been made for the use of the board in levying an assessment to cover the cost of reconstructing and protecting about 3,550 feet of levee on the lower Sacramento River near Freeport.

Assessment Plant. Maps showing every piece of property within the Sacramento and San Joaquin Drainage District covering about 1,726,000 acres of land, extending into fourteen counties, have been prepared, and the description of each tract obtained, with the ownership up to July, 1915, and records of transfers are received from each county each week, so that the ownership may be brought up to date at any future time.

This plant also includes the compilation of data regarding high water marks and extent of lands flooded by various breaks in levees.

Financial Statements.

Following are two financial statements; the first showing in detail disbursements from the state appropriation of $100,000.00 provided by chapter 170, Statutes of 1913, and the balance remaining in that appropriation on January 1, 1916; the second showing collection of moneys under General Assessment No. 1, disbursements from same, liabilities incurred by reason of warrants issued against assessments levied but not yet collected, and moneys available on January 1, 1916, in funds collected under General Assessment No. 1:

COLLECTIONS BY STATE TREASURER UNDER GENERAL ASSESSMENT NO. 1, FROM JULY 1, 1915, TO AND INCLUDING DECEMBER 31, 1915.

County	First call of 60 per cent made June 15, 1915	Paid to state treasurer December 31, 1915
Butte	$9,800 00	$6,034 34
Glenn	5,450 00	2,299 74
Colusa	14,350 00	4,392 55
Yuba	5,700 00	4,351 85
Sutter	25,440 00	18,934 09
Yolo	12,570 00	9,427 99
Sacramento*	32,800 00	40,377 03
Solano	4,600 00	3,163 14
San Joaquin†	23,850 00	16,795 14
Contra Costa	4,700 00	4,038 32
Stanislaus	1,100 00	462 27
Merced	6,070 00	611 06
Madera	1,770 00	60 75
Fresno	1,800 00	575 09
	$150,000 00	$111,523 36

Total disbursements and liabilities from August 11, 1913, to and including December 31, 1915		$216,499 38	
Warrants registered against assessments Nos. 2 and 4	$105,958 33		
Disbursements from appropriation (Chap. 170, Stats. 1913). For details see page 32a	90,994 65		
		$196,952 98	
Disbursements from moneys collected under general assessment No. 1			$19,546 40
Balance available in moneys collected under General Assessment No. 1, January 1, 1916:			
Sacramento and San Joaquin Drainage District Fund, General Assessment No. 1		$47,582 38	
Revolving Fund (Sec. 20, Chap. 686, Stats. 1915)		44,394 58	
			$91,976 96

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*The amount paid by Sacramento County to the state treasurer is greater than the amount called for the reason that many landowners in Sacramento County paid the total assessment instead of the 60 per cent which was called.

†There was also in the hands of the county treasurer of San Joaquin County the sum of $5,216.52, which was paid under protest, and for that reason was not turned into the state treasury.

State Appropriation for the Board.

It is very earnestly recommended that all administrative and other expenses of this board be paid by regular appropriation, as are similar expenses of all other boards and commissions of the state. With the exception of the Railroad Commission, there is perhaps no commission or board, under the state government, whose functions will be so important as those of this board, particularly if, as has been suggested, its jurisdiction be extended. Certainly, there is no board, the successful prosecution of whose labors will result in adding more to the prosperity, wealth and commerce of the state. The most bitter opposition which this board has encountered has been because of the levy of General

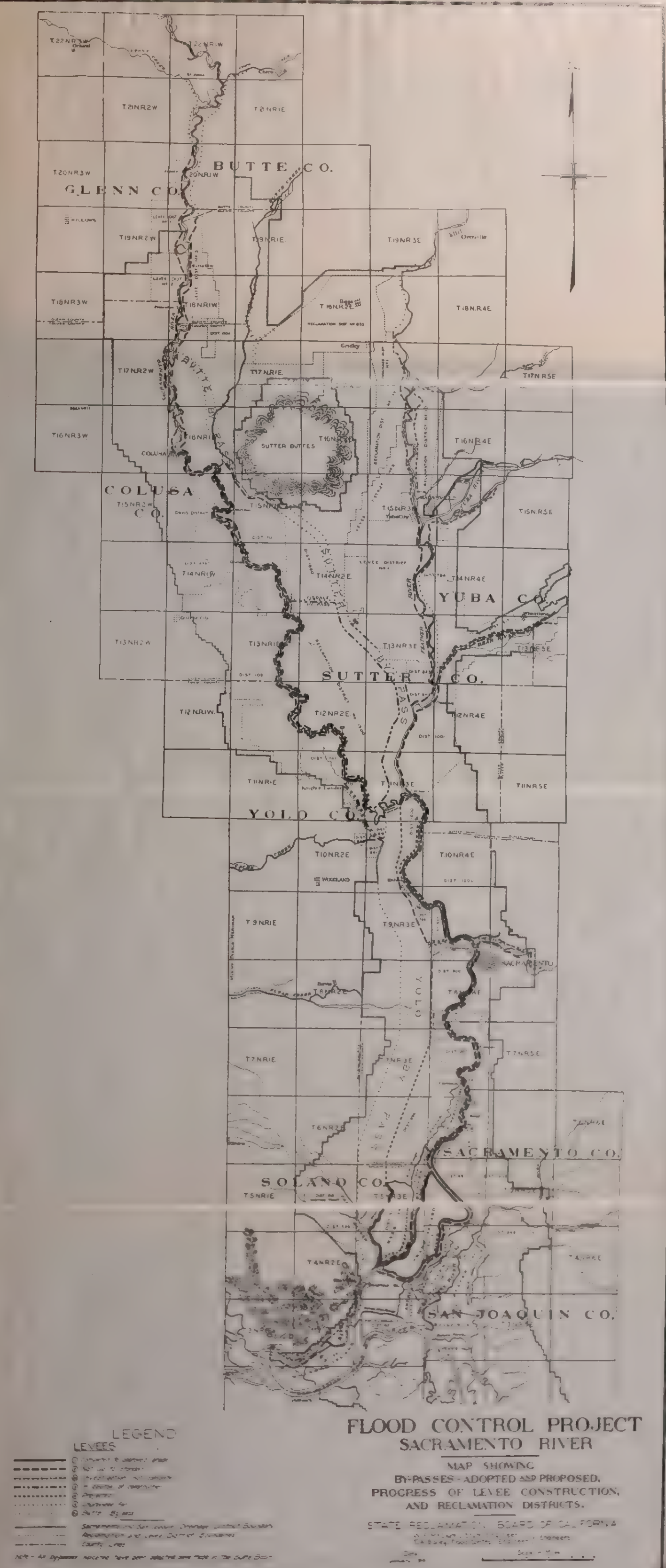
Assessment No. 1, for administrative expenses, necessitated by the policy adopted by the legislature and its failure to provide an appropriation for such expenses. It has been manifestly impossible to so levy this assessment on individual parcels of land as to convince each owner that his assessment had been levied in proportion to the benefits which such land would receive from future deliberative, judicial, or administrative acts of the board. Owners who would willingly have paid many times larger assessments for actual construction of units of the project, based on benefits conferred on the individual parcels of land, objected most strenuously to this assessment and to the method of spreading it. And with the point of view of the landowners in this matter, this board feels a certain amount of sympathy.

In view of the fact that the State of California has accepted from the nation title to the overflow lands of the Sacramento and San Joaquin valleys, with the express obligation to reclaim the same, it would seem that the state ought to pay any expenses incurred in the administrative work of a board whose principal duties are in connection with the promotion of flood control, without which the reclamation of such lands is not practicable.

The present method of providing funds for the administrative expenses of the board by assessment is a very wasteful one. It necessitates expenses in the matter of levying the assessment and spreading thereof, in the hearings held in each county by assessors and by the board; in the preparation of elaborate assessment rolls; and in clerical assistance which this board has found it necessary to furnish in many of the counties to the county treasurers while acting as assessment collectors. Were the board compelled to regularly secure its funds for running expenses in this way—through an assessment made each year—the cost of making and collecting the assessment would form a very large part of the assessment. It is indeed a wasteful and extravagant method of conducting the business of the board, and the fact that the burden is placed directly upon the landowners, instead of coming upon them indirectly through taxes or rates to public utilities is, in our judgment, no excuse for continuance of the policy.

If the recommendation herein made as to providing regular appropriations for expenses of this board be followed in advance of the collection of the second installment of General Assessment No. 1, provision should be made for return of such second installment to those who paid it at the time the first installment was paid.

Funds should also be provided by state appropriation for the collection and publication for future use of all hydrographic data which may be of use in planning flood control works on the various streams of the state. This is exceedingly important, since such data is the foundation

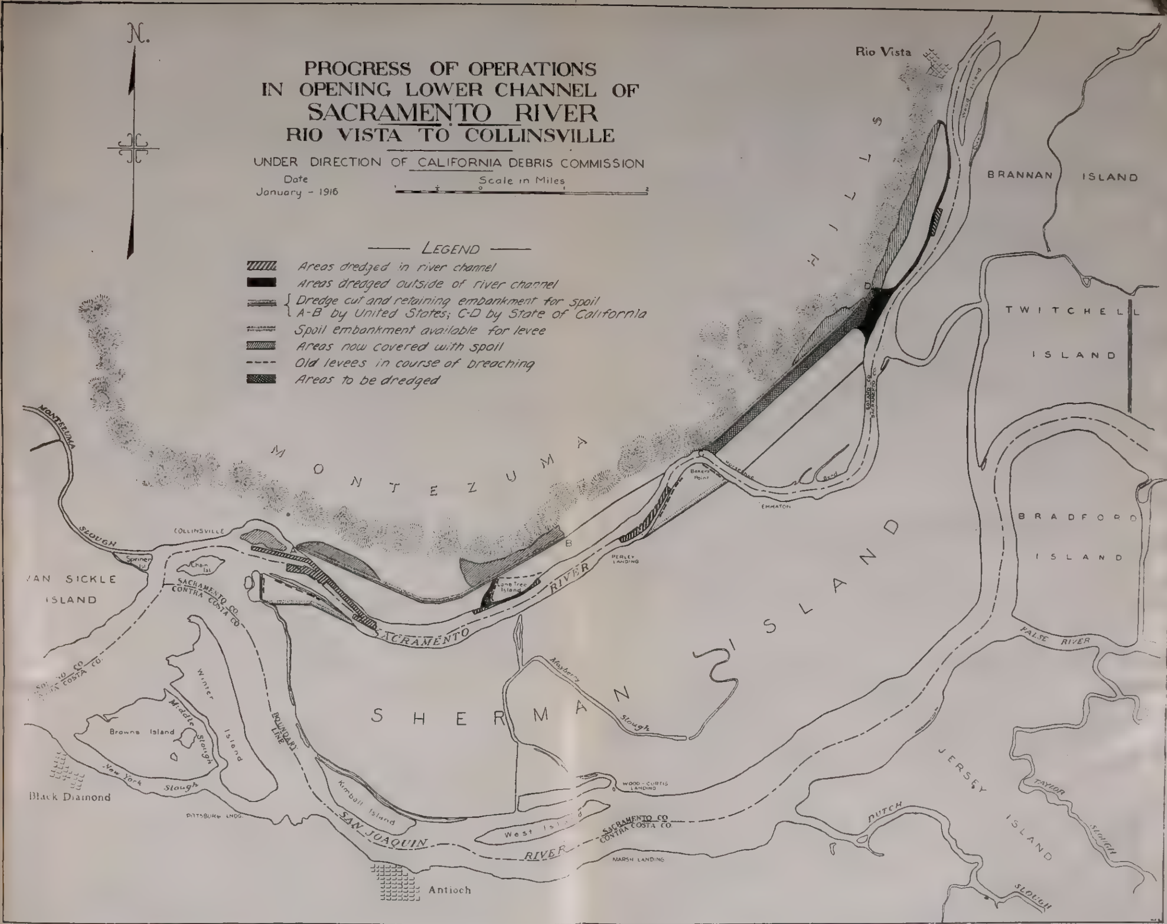


FLOOD CONTROL PROJECT
SACRAMENTO RIVER

MAP SHOWING
BY-PASSES - ADOPTED AND PROPOSED.
PROGRESS OF LEVEE CONSTRUCTION,
AND RECLAMATION DISTRICTS.

STATE RECLAMATION BOARD OF CALIFORNIA

Scale in Miles



PROGRESS OF OPERATIONS
IN OPENING LOWER CHANNEL OF
SACRAMENTO RIVER
RIO VISTA TO COLLINSVILLE

UNDER DIRECTION OF CALIFORNIA DEBRIS COMMISSION

Date
January - 1916

LEGEND

- ▨ Areas dredged in river channel
- ■ Areas dredged outside of river channel
- ▤ Dredge cut and retaining embankment for spoil A-B by United States; C-D by State of California
- ▬ Spoil embankment available for levee
- ▨ Areas now covered with spoil
- ---- Old levees in course of breaching
- ▩ Areas to be dredged

upon which depends the sufficiency of any flood control plan. This is aptly illustrated in the Dabney Commission plan for the Sacramento Valley, which was based upon all the data available at the time, but which was shown by the collection of further data in later years, to have only one-half to one-third the capacity needed.

A lack of sufficient data of record in the streams of the San Joaquin Valley is making the determination of a plan for that valley very difficult.

Financing Assessment by Bonds.

The Reclamation Board confronts a very serious problem in its inability, under the law, to issue bonds for the construction of any necessary units of the project. It is empowered to levy and collect assessments therefor, but such assessments must be, in many instances, extremely large, and the entire amount must often be collected at one time in order to meet the bills of contractors. The assessments for certain units must fall in large part upon lands which do not now produce any revenue, which, in consequence, are not able to meet the necessary assessment until after reclamation is completed, and which, if bought in by the district under forced sale, would yield no revenue for construction purposes. Under such conditions a system of bond issue would seem the only feasible means of securing early completion of important elements of the project.

State Control of Storage Reservoirs.

Storage reservoirs, whether operated in the interests of flood control, or power, or irrigation, or municipal supply, are a source of grave danger to the people and property below the dams. The use of such a reservoir creates a danger which did not exist prior to its construction, since it may hold back the flood and normal flow of its entire drainage area for one entire season or more. If the dam breaks the flood precipitated on the country below the dam in a few hours may be twice, ten times, twenty times, in volume that which would have been precipitated in the absence of the reservoir by the forces of nature, and that much in excess of any protective measures adopted or possible to safeguard life and property below.

The public safety is entirely dependent on the strength of the dam. At the critical moment it may prove insufficient because of poor planning, or poor construction or defects which develop after construction. Concrete structures are particularly liable to develop defects (even when dishonest intent is lacking) because of poor judgment, poor material, insufficient proportions, improper mixing, or climatic conditions. Lack of vigilance may permit grave defects to develop unnoticed, and it may be even possible so to operate a reservoir as to constitute a public nuisance if not a serious danger.

A reservoir is operated usually for private gain, or advantage, or as public utility in the interest of a small portion of the citizenship of the state. In either case the parties benefited have no right to create a danger to their neighbors without properly safeguarding those neighbors from injury. If the reservoir be for flood control in the general public interest, the state has no right to so operate it as to unnecessarily endanger the lives and property of citizens.

In any event it would seem to be the duty of the state to exercise such control of the planning, construction, maintenance and operation of such structures that they may not offer menace to lives and property below them, and to forbid their construction or use if the necessary safeguards can not be applied. So far as concerns structures of the kind on streams within the jurisdiction of this board, it strongly urges legislative action along the lines indicated. The State Engineering Department, under existing conditions, would seem the logical department in which to repose the necessary authority. The legislature of 1915 provided that plans for such structures should receive approval that department, but provided no penalty for failure to comply wi the law and gave no power to the department to enforce its ruling as t plans, and no authority to supervise construction; nor did it provide for future inspection to detect the development of defects, or the right to prevent use of a dam if it seemed dangerous. In the judgment of this board, the law should confer powers and responsibilities, such as are indicated, and should impose the most stringent penalties, not in the way of fine but of imprisonment, on those who, through intent or carelessness, violate or evade the intent of the provisions suggested, or otherwise seriously endanger the safety of the people and property below the reservoirs.

Respectfully submitted.

V. S. McCLATCHY.
A. G. FOLGER.
G. A. ATHERTON.
PETER COOK.
W. T. ELLIS.
LOUIS H. FRANKENHEIMER.
M. C. ZUMWALT.

Sacramento, April 1, 1916.

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